Prepared for

State of Washington
Legislative Transportation Committee

January 1992

Final Report

Volume III: Local Case Studies

Programming and Prioritization Study

Prepared by

Cambridge Systematics, Inc.
with
Wilbur Smith Associates

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Table of Contents

Volume III: Local Case Studies

Table of Contents
(continued)

List of Tables

List of Tables
(continued)

List of Tables
(continued)

List of Tables
(continued)

List of Figures

Executive Summary

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■ Issues Addressed in the Local Case Studies

An analysis of programming and prioritization practices at the local level has been conducted to address the following key questions:

- What types of programming methods are in use at the local level?
- What influence do current state funding programs for local jurisdictions have on local programming methods?
- How is interjurisdictional coordination being accomplished among local jurisdictions and between local jurisdictions and the state?
- How do programming processes at the state, county, and city levels compare?
- Is increased consistency in program structure and methods among jurisdictions desirable?

In-depth case studies of programming methods in five cities and six counties have yielded some preliminary answers to these questions.

■ Local Programming Methods

- Six-year planning is very much an accepted procedure, even within small, rural jurisdictions. Priority programming requirements at the state and county levels, along with establishment of ranking methods for the Urban Arterial Trust Account (UATA) and the Rural Arterial Program (RAP) programs, and statewide priority methods for Federal bridge and safety projects have resulted in widespread familiarity with and acceptance of concepts and methods for prioritization of projects within local jurisdictions. This same level of familiarity and acceptance is not typically present in other parts of the country.

- Jurisdictions have developed a variety of programming and prioritization methods which vary according to local needs and priorities, the size of the road program and the amount of local discretionary funds. However, all jurisdictions face similar challenges in programming: matching funding sources to needs, accommodating uncertainties in funding availability, project schedules and budgets, and establishing an objective basis for prioritization while maintaining the flexibility to consider nonquantifiable factors in project selection decisions.

- Some jurisdictions have developed their own ranking methods for prioritizing improvement projects. Smaller jurisdictions tend to use less formal prioritization methods than larger ones, due to limited program budgets.

- There is strong emphasis in all jurisdictions on maintenance and preservation of existing infrastructure, and on safety projects. However, in urban areas or rural areas which are experiencing growth, priority is given to projects which address congestion and economic development objectives.

- Due to the number of Federal, state and local funding sources, and the complexity of eligibility requirements and allocation methods, local programming processes are often structured according to categories based on funding sources rather than categories based on project type or objective. There is an emphasis on matching available funds, which sometimes conflicts with the establishment of a systematic process for setting priorities among all types of projects.

■ Influence of State Programs

- Current state and Federal funding programs are providing significant resources for local jurisdictions, and addressing important local needs. Some jurisdictions reported that if there were no "strings" on the use of state and Federal program funds, they would spend them in very much the same way. Others reported that they would focus on different types of projects which were important locally but do not tend to score high with established state program selection criteria.

- Some jurisdictions do not have significant amounts of dedicated local funds for transportation, and use most of their gas tax funds to match Federal and state program grants for specific projects. This means that priority formulas associated with state and Federal funding programs may have more influence on local projects than local policy or priority-setting mechanisms. As additional discretionary revenues are made available through the new local option taxes, local prioritization methods will have more of an impact.

- Some jurisdictions feel that the competitive basis for allocation of funds for state programs creates uncertainty and limits their ability to develop accurate plans. It also creates the need for "contingency programming" of local funds which may or may not be required for matching.

■ Interjurisdictional Coordination

- The nature and importance of interjurisdictional coordination varies from area to area. In general, more urbanized, growing jurisdictions have taken steps to establish formal mechanisms for interjurisdictional planning, and coordinated transportation projects. Smaller, more rural areas rely primarily on informal coordination mechanisms. All jurisdictions share their six-year plans with other affected agencies.

- Examples of successful joint planning efforts exist, such as the Eastside Transportation Program (ETP). This program developed consensus on approaches to problems and priorities, and resulted in the definition of joint projects. Joint planning efforts of this nature are effective mechanisms for interjurisdictional coordination, particularly where the problems are complex and involve a multimodal approach.

- WSDOT's Local Programs Division serves as an important liaison with local jurisdictions with respect to joint state-local projects, and the matching of available state and Federal funding to needs.

- The Transportation Improvement Account (TIA) program is viewed as an effective "carrot" for development of projects involving multiple jurisdictions and private interests. Several successful project examples were cited, and it was felt that these projects would not have happened at all, or would have taken much more time to be initiated if TIA did not exist.

- State and local coordination was seen as strong at the project implementation level, but not as strong as it might be in some cases at the planning and programming level. Differences in programming cycles was one factor contributing to coordination difficulties. Several jurisdictions felt that notice of WSDOT's plans further in advance, along with a well-defined process for introducing local projects for consideration in WSDOT's programming pipeline, and regular communication with the districts would improve coordination. Many jurisdictions did feel that there has been an improvement in coordination with WSDOT in recent years, and that steps being taken to devote more resources to planning, and to develop long-range plans for each state route, are very positive.

- While legislative requirements for sharing six-year programs and joint planning has helped to improve coordination, informal coordination is found to be very valuable. The extent to which such informal coordination occurs is highly dependent on individuals and varies across WSDOT districts and jurisdictions.

- The Growth Management Act will be a major force shaping coordinated planning efforts in the future, and case study jurisdictions which are required (or have elected) to plan under this act acknowledge that there is considerable work to be done to strengthen regional planning and achieve concurrency between transportation and land use decisions.

■ Comparison of State, County, and City Programming Methods

- Variations among jurisdictions in the level of resources available, the number of outside funding programs and associated eligibility requirements, and the nature of needs and priorities define the "ground rules" for programming and have a significant influence on programming methods used. Legislative requirements also have an important influence on programming processes at all levels of government.

- Where there is a relatively small amount of discretionary funding, programming categories tend to be aligned with funding programs, and there is little incentive for developing prioritization methods which make tradeoffs across categories. Where there is a sizeable pool of funds which may be allocated on a discretionary basis, there is more of a tendency to develop categories based on project type and develop structured methods for prioritization of projects within and across categories.

- Differences in programming processes across jurisdictions reflect a wide spectrum of needs and priorities. The nature and diversity of needs affects the types of projects considered, the specific categories used for programming, the manner in which funds are allocated, and the types of criteria used for prioritization.

- Prioritization methods used at the state level tend to be more structured and formalized than those used by most cities and counties. Some of the larger cities and counties have developed their own priority methods which include a broader set of evaluation criteria than are used by WSDOT, or in the UATA and RAP programs. These locally-defined criteria include factors which are less quantitative than those used by the state.

■ Desirability of Increased Consistency

- There is already quite a bit of consistency in programming processes among jurisdictions. Key elements of consistency include the six-year programming requirements, use of the Federal functional classification system, uniform Budgeting, Accounting and Reporting System (BARS) reporting standards, the Federal funding program requirements and statewide priority methods for bridge and safety projects, the Transportation Improvement Board (TIB) and the County Road Improvement Board (CRAB) program priority methods and standardized data requirements.

- Substantial differences in budget sizes, needs and priorities, and funding sources have lead to different approaches to programming in different jurisdictions. However, accepted methods and tools such as prioritization based on measurable criteria, and the use of pavement management systems can be promoted.

- One such method which is not currently promoted in any formal manner is the evaluation of projects in a cost-benefit framework. Arraying the potential benefits of a project and comparing these benefits to the

capital, operating, and maintenance costs is useful for making tradeoffs among projects. However, it is not currently applied at either the state or local level on a consistent basis.

- Consistency in programming methods across jurisdictions is automatically achieved in the Federal bridge and safety programs and the UATA and RAP programs through the use of a competitive basis for distribution of funds statewide or within regions. Even though some of the larger jurisdictions apply their own local priority methods to rank urban and rural arterial projects, the priority formulas established for these programs are used in virtually all jurisdictions to select projects which have a high probability of being funded.

- Increased consistency in reporting of program information at the state and local levels would facilitate the measurement of program accomplishments and make it easier to compare programs of different jurisdictions. By using a standard project-type classification system, expenditures could be summarized according to broader categories (such as capacity and preservation) in order to provide an aggregate picture of the nature of investments being made. Consideration of new requirements for reporting consistency should weigh the potential benefits in terms of accountability and communication against the administrative burden which might be imposed, particularly on smaller jurisdictions. Many jurisdictions perceive Federal and state reporting requirements to be burdensome, and without clear local benefits.

1.0 Introduction

1.0 Introduction

1.1 Overview of Report

This volume presents the results of Task D of the Washington Programming and Prioritization Study (PAPS). This task involved an examination of the programming practices of local jurisdictions on a sample basis.

An understanding of the current variations in programming methods of different levels of government and different geographic areas provided necessary background for recommending changes to state programs which affect local jurisdictions. It also assisted in the development of strategies for improving interjurisdictional coordination. Issues of interjurisdictional coordination and consistency are becoming increasingly important in the context of the Growth Management Act, which calls for an expanded regional role in transportation planning and decision-making. Specific recommendations of the PAPS are presented in Volumes IV (Detail) and I (Summary).

This volume is organized into five chapters:

- Chapter 2.0 provides background information on current regulations and funding programs which establish the context for local programming processes.

- In Chapter 3.0, local programming methods in use in the sampled jurisdictions are described.

- Chapter 4.0 presents key issues in four different areas of interest: similarities and differences between state and local programming methods, the impacts of state policies and programs on local processes, current issues related to state-local coordination programming, and the degree and desirability of consistency in programming practices across jurisdictions.

- Finally, Chapter 5.0 presents findings and options for state initiatives to improve state-local coordination, facilitate local programming processes, respond to emerging growth management and environmental regulations, and strengthen ties between policies and programming at all levels of government.

Appendices A and B present detailed case study results for each of the eleven sampled jurisdictions.

A glossary of acronyms used in this report may be found in Volume I.

■ 1.2 Methodology

The local case studies consist of a limited sample of five cities and six counties. The sampled jurisdictions were selected by the County Road Administration Board (CRAB) and the Association of Washington Cities, in cooperation with the WSDOT Local Programs Office based on the following criteria:

- Type of area: urban/rural/suburban;
- Growth/no growth;
- Geographic location;
- Programming methods and structure;
- Funding sources and allocation methods;
- Interjurisdictional coordination approaches; and
- Willingness to participate.

Figure 1.1 shows the location of the selected jurisdictions. The counties selected were Adams, Benton, Grays Harbor, King, Spokane, and Yakima. The cities selected were Redmond, Seattle, Shelton, Spokane, and

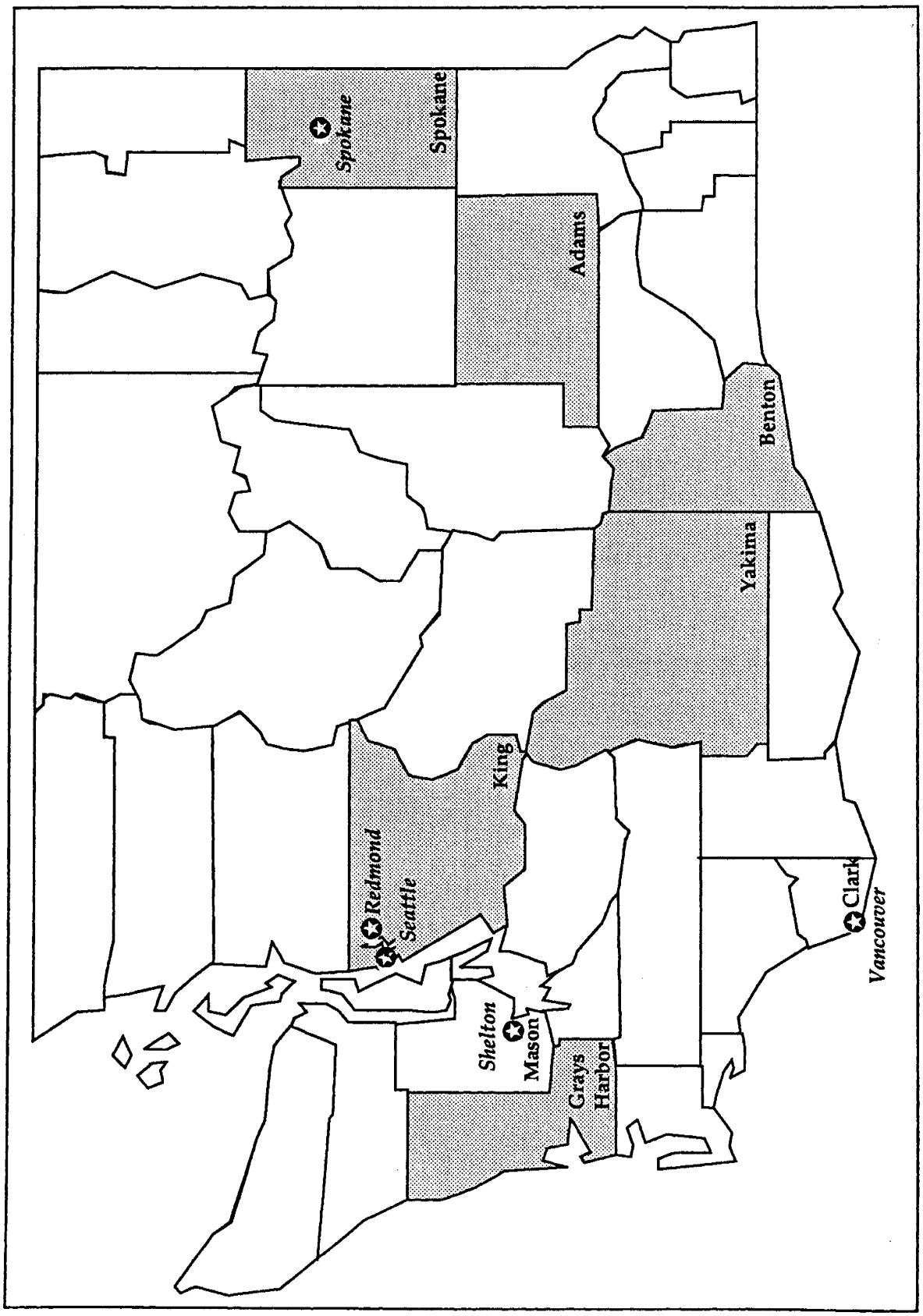


Figure 1.1 Local Case Study Sites

Vancouver. Table 1.1 shows the population and growth characteristics of the case study sites. While the sample is not statistically derived and is not sufficient to allow for generalizations to be made about all jurisdictions in the state, it does represent a range of characteristics and concerns of local jurisdictions in Washington.

Each case study includes:

- A profile of the jurisdiction's employment, population, and transportation characteristics and trends to provide a context for analysis and comparison;
- A profile of highway expenditures and revenue sources;
- A discussion of local policy directives which are directly or indirectly related to road maintenance and improvements;
- A description of the formal and informal procedures and criteria for local programming and prioritization of road projects, including how funds are allocated between and within program categories, what factors are considered, how tradeoffs are made between preservation and capacity projects, and the extent to which consideration of transit modes, such as including buses, high-occupancy vehicle (HOV) lanes and ridesharing, enters into the process;
- An assessment of how the structure and matching requirements of state highway programs affect prioritization of projects and the achievement of local objectives;
- Identification of current issues related to state and local coordination of highway projects, including an assessment of whether inconsistencies in program category definition or differences in budget cycles between the state and local jurisdictions present logistical or scheduling difficulties;
- Identification of issues related to multi-jurisdictional coordination of road projects, as well as successful examples of multi-jurisdictional coordination which could serve as models for other areas.

Table 1.1 Characteristics of Sample Jurisdictions

	1990 Population	Est. 1991 Population	1980-1990 Growth	1990-1991 Est. Growth
Cities				
Seattle	516,259	518,000	5%	.3%
Spokane	177,196	178,500	3%	.7%
Shelton	7,241	7,310	-5%	.9%
Vancouver	46,380	47,190	8%	2%
Redmond	35,800	37,460	54%	5%
Counties (unincorporated)				
Adams	6,466	6,606	7%	.2%
Benton	27,842	28,955	-14%	4%
Grays Harbor	24,987	25,748	1%	.3%
King	513,298	531,881	2%	4%
Spokane	165,442	168,433	9%	2%
Yakima	88,241	86,881	6%	-2%
Counties (incorporated)				
Adams	7,137	7,194	-1%	.8%
Benton	84,718	85,845	10%	1%
Grays Harbor	39,188	39,352	-6%	.4%
King	994,021	1,010,419	30%	2%
Spokane	195,922	197,567	3%	.8%
Yakima	100,582	103,619	13%	3%

Source: Office of Financial Management, Forecasting Division, June 28, 1991.

2.0 The Context for Programming at the Local Level

2.0 The Context for Programming at the Local Level

There are a number of state and Federal funding programs and regulations which affect the programming methods used by local jurisdictions. This chapter reviews the regulatory and funding context in which cities and counties prioritize and select road and street improvements.

2.1 Regulations

State Priority Programming Requirements

In 1961, the Washington State Legislature established requirements for counties and cities to prepare and perpetually maintain comprehensive six-year road and street programs. These programs, which are intended to ensure advanced planning and coordination of improvement projects, must be adopted by local legislative bodies and filed with the state. This long history has bred a level of familiarity with, and acceptance of, programming and prioritization methods at the local level that is not typically present in other parts of the country.

Since 1961, the legislation has been updated to require designation of rural and urban arterial projects in the six-year program as a condition for state funding from the Rural Arterial Program (RAP) and Urban Arterial Trust Account (UATA) program. General criteria for prioritization of projects for

these two funding programs are set forth, and joint planning of multi-jurisdictional projects is required. Requirements have also been added for submission of county programs to the County Road Administration Board (CRAB), and submission of both county and city programs to the Transportation Improvement Board (TIB).

CRAB has established standards of good practice for county road departments which require priority programming procedures (WAC 136 Chapter 14). These procedures call for a ranking of potential projects on the arterial system based on a locally determined method which considers, at a minimum, traffic volumes, roadway condition, geometrics, and "matters of significant local importance." The standards also state that priority programming is "recommended, but not required" for the local access road system. CRAB also requires that counties use a pavement management system to select pavement projects in order to be eligible for receipt of County Arterial Preservation Program (CAPP) funds.

Cities and counties are required to conduct public hearings prior to adoption of their six-year programs, and must send copies of their six-year plans to affected jurisdictions and agencies. According to TIB administrative code, written acknowledgement is required from each adjacent city, county, and WSDOT district office that it has evaluated the proposed six-year program for the purpose of proposing related arterial improvement projects, in order to contribute to the goal of an integrated and coordinated arterial and highway system. Joint planning with WSDOT or other jurisdictions is required on both urban and rural arterial projects which cross jurisdictional boundaries or connect with the state highway system.

Growth Management Act

The 1990 Growth Management Act requires that local road, street, and transit six-year programs must be consistent with local comprehensive plans, and that local comprehensive plans must be consistent among adjacent jurisdictions. The act also states that the transportation element of local comprehensive plans must develop regionally coordinated level of service standards. (This requirement affects the state highway system in addition to local streets and roads.) Regional transportation planning organizations (RTPOs) are to coordinate transportation planning on a regional basis – they must certify that local government transportation plans meet state requirements and are consistent with the regional transportation plan. These requirements have yet to be fully implemented, and will have an impact on highway programming at all levels of government – state, county, and city.

Transportation Demand Management

New transportation demand management legislation requires each county with a population over 150,000 and each city with a major employer (100 or more employees) to adopt and implement a commuter trip reduction plan for all major employers. These plans must be designed to achieve at least a 15 percent reduction in vehicle miles by 1995, 25 percent by 1997, and 35 percent by 1999. This legislation reinforces a policy of promoting urban mobility through transit and ridesharing.

Federal Urban Transportation Planning Requirements

In urban areas, development of a regional Transportation Improvement Program (TIP) is required in order to ensure that federally funded transportation projects are coordinated across jurisdictions. (In fact, this requirement does not result in regional coordination; the TIP is typically simply a compilation of local lists.)

The Federal Clean Air Act

Amendments to the Clean Air Act were passed in 1990 which are expected to have major impacts on the transportation planning and project development processes in non-attainment areas. Metropolitan areas which are in serious violation of air quality standards may be required to implement transportation control measures in order to reduce vehicle miles of travel and congestion. Metropolitan areas in Washington which may be affected by these new regulations are Seattle-Tacoma, Portland-Vancouver, Spokane, and Yakima.

The new state Clean Air Act requires conformity between the State Implementation Plan (SIP) for air quality and the approval for funding of transportation plans, programs and projects. Maintenance and preservation projects are exempted from this conformity requirement.

■ 2.2 Funding Programs

This section reviews the different sources of Federal, state, and local revenues available to cities and counties for road and street projects. A number of state and Federal funding programs have eligibility, local match, and planning requirements which have important impacts on local programming processes.

Federal

Cities and urban counties receive Federal-Aid funds through the Local Programs Division of WSDOT, administered through Category Z.

Federal-Aid Urban System (FAUS) funds ($13 million statewide in 1991) are distributed to cities and counties based on a formula, and in most jurisdictions, project selection is at local discretion. In King County (excluding Seattle), FAUS funds are prioritized on an areawide basis by the King Subregional Transportation Committee. Federal requirements call for the development of a regional transportation improvement plan (TIP) in urbanized areas (over 50,000 population) at the regional metropolitan planning organization (MPO) level to ensure that projects are being coordinated between jurisdictions. Urban areas with a population less than 5,000 compete for FAUS funds on a statewide basis. FAUS funds require a 16.87 percent local match.

Federal-Aid Secondary (FAS) funds are for construction or reconstruction of rural roads on the Federal-Aid Secondary System. Funds are distributed to counties on a formula basis. About $8 million of a total of $10 million in FAS funds statewide are being allocated to counties. (The remaining $2 million is allocated to WSDOT for the state highway system.) FAS funds require a 16.87 percent local match.

Bridge Replacement and Rehabilitation (BR) funds are for rehabilitation or reconstruction of bridges on public roads and streets. One-half of the state's allocation ($33.8 million in FFY 1991) is used for local jurisdiction projects. Bridges must be structurally deficient or functionally obsolete, and must have a federally-determined sufficiency rating low enough to qualify. Candidate projects are evaluated by the Bridge Replacement Advisory Committee (BRAC), a standing ad hoc Committee of WSDOT, city and county engineers. Eligible projects compete for available funds on a statewide priority basis. BR funds require a 20 percent local match.

Hazard Elimination (HES) funds may be used for projects on public roads to improve locations which constitute a danger to vehicles or pedestrians as shown by the frequency of accidents. Eligible projects include intersection improvements, alignment changes, and installation of protective devices. Major construction projects are not eligible for these funds. Local jurisdictions receive 60 percent of the state's HES allocation, which was $3.0 million in FFY 1991. Projects are prioritized and selected statewide based on a cost-benefit ratio. A ten percent local match is required.

Rail-Highway Crossing (RR) funds are available for projects which are aimed at reducing fatalities, injuries and damages through improved railway-highway crossings including installation of signs and markings, train-activated warning devices, and illumination. Of the state's RR

allocation ($2.7 million in FFY 1991), local jurisdictions receive 80 percent. Projects are proposed by local agencies and funded in cooperation with the Washington Utility and Transportation Commission (WUTC). For construction of warning devices, a one percent state funding match is required. For preliminary engineering and other construction projects, a ten percent local match is required.

Emergency Relief (ER) funds are available on an as-needed, emergency basis for repair and reconstruction of roadways and bridges on Federal-Aid systems which have suffered serious damage as a result of natural disasters or catastrophic failures. The Governor must declare an emergency for these funds to be approved. Funds are awarded based on the actual costs of needed repairs.

State

The WSDOT Local Programs Division serves as an important liaison to local jurisdictions with respect to Federal and state funding. The Legislature has established four separate funding programs for arterial road and street projects in local jurisdictions. Two are administered by CRAB; the other two are administered by TIB. In addition, the Public Works Trust Fund (PWTF) and Community Economic Revitalization Board (CERB) provide loans and grants for infrastructure projects. The state also provides a statutorily defined share of the 23-cent gas tax to cities and counties.

WSDOT Local Programs Division (Category Z)

The WSDOT Local Programs Division performs a variety of functions which are directed at maintaining a strong state-local partnership in transportation and making effective use of available funding:

- Administration of pass-through Federal funds to local agencies.
- Provision of assistance to local agencies in obtaining and utilizing available funds.
- Optimization of the use of Federal and state funds available to local agencies.
- Provision of technical and engineering services and training.
- Coordination of joint state-local projects.

CRAB Programs

The **Rural Arterial Program (RAP)** was established in 1983, and is currently providing $14.5 million annually for rural collectors which have capacity, structural, geometric, or safety-related deficiencies. RAP funds are allocated to five different regions through a formula based on rural land area and miles of rural collectors. CRAB, in conjunction with county road engineers and officials in the different regions have established prioritization methods for funds in each region. Each county submits eligible projects to CRAB, and funds are allocated to the highest ranking projects within each region. A 10-20 percent local match is required, depending on region.

The **County Arterial Preservation Program (CAPP)** was created in 1990 with an annual funding level of $12 million for pavement preservation projects on both rural and urban arterials within unincorporated areas. Funds are distributed to counties based on the share of paved arterial lane-miles. Counties are required to utilize a pavement management system and submit an annual program of pavement preservation projects and an annual report of accomplishments to CRAB.

TIB Programs

The **Urban Arterial Trust Account (UATA)** was established in 1967 to fund city and urban county arterial road and street projects to reduce congestion and improve safety, geometric, and structural deficiencies. In 1990, project payments under this program totalled $16.3 million. UATA is divided into an urban program and a rural program. For the urban program, funds are apportioned to five regions based on each region's share of total urban area population, non-Interstate vehicle miles, and urban arterial preservation needs. For the rural program, funds are divided based on relative population percentages within each region. Local governments submit inventory information on their arterial systems and proposed projects to TIB. TIB prioritizes project applications based on structural condition, traffic, adequacy of alignment, and accident experience. A 20 percent local match is required for the urban program; ten percent is required for rural incorporated cities with a population of 5,000 or less.

The **Transportation Improvement Account (TIA)** was established in 1988. This account funds an urban program (87 percent of funds) for urban counties and cities with populations over 5,000, and transportation benefit districts (TBD); and a small cities program (13 percent of funds) for cities with a population of less than 5,000. The urban program is aimed at supporting projects which address congestion caused by economic growth, are consistent with state, regional and local transportation plans, support economic development, and are multimodal and multi-jurisdictional in nature. The small cities program addresses structural, geometric, congestion, and safety deficiencies. A 20 percent minimum match is required for the urban program and small cities with a population of 501-5,000 must

provide a five percent minimum match. No match is required for small cities with a population of 500 or less. Urban program funds must be distributed so that minimum regional distribution targets are met. A minimum of 30 percent of the funds must go to the Puget Sound Region, and the East and West Regions must each receive at least 15 percent of the funds. Small city funds are distributed based on relative small city population within each of the three regions. To receive funding under TIA, cities and counties submit applications together with their six-year transportation programs. TIB develops a priority array of projects as a basis for selection.

Other

The **Public Works Trust Fund (PWTF)** was established in 1985 to provide low-interest loans to counties, cities, towns, and special purpose districts for "repair, replacement, rehabilitation, reconstruction or improvement of eligible public works systems to meet current standards and to adequately serve the needs of the existing population." Roads, bridges, water, storm sewer, and solid waste projects are eligible for funding. To receive loans, agencies must levy at least a .25 percent local real estate excise tax earmarked for infrastructure purposes, and must have a Capital Improvement Plan (CIP) in place. The PWTF offers no-interest loans to agencies of up to $15,000 for the development of long-range CIP's. Loans are available only to address existing demand, not to accommodate growth. Project applications are prioritized on a statewide basis by PWTF.

The **Community Economic Revitalization Board (CERB)** also provides low-interest loans (and grants) for infrastructure projects which will result in specific private developments or expansions in manufacturing and businesses that support trading of goods and services outside of the state's borders.

Community Development Block Grants (CDBG) are targeted to projects which provide benefits to low and moderate income households, including street, sidewalk and other infrastructure improvements. CDBG grants totalled $8.5 million in 1991. No local match is required.

Gas Tax

Cities and counties receive a gas tax distribution for discretionary use. This allocation is 6.88 cents, or 30 percent of the total 23-cent tax. Of this amount, up to 1.5 percent is deducted for state supervision, and up to 0.33 percent is deducted for special legislative studies. The CAPP, RAP, TIA, and UATA programs described above are supported by another 4.07 cents of the gas tax. Thus, 10.95 cents, or 48 percent, of the gas tax is currently applied to county and city road and street projects.

Counties receive a direct allocation of 4.42 cents per gallon – a 22.78 percent distribution of the original 17-cent tax (3.87 cents), and an additional .55-cent of the five-cent increase approved in 1990 and 1991. Cities receive a direct allocation of 2.46 cents – including a 6.92 percent share of the 17-cent tax (1.17 cents) which may be used for any street purpose (and is typically used for routine maintenance), a 4.61 percent share of the 17-cent tax (.78 cents) which must be used for preliminary engineering, right-of-way, construction, improvement, and repair of arterial and city streets, and a .50-cent share of the five-cent increase. The state is projecting 1991 gas tax revenues (for direct allocation) of $62 million for cities and $106 million for counties.

Local

Local jurisdictions may draw upon a variety of general local revenue sources (such as property tax, sales tax, or development fees) for road and street projects. Counties use a property tax-based road levy as a major revenue source. In addition, a number of new local option taxes were approved in the 1990 legislative session.

County Road Levy

A county property tax road levy of up to $2.25 per thousand dollars of assessed valuation may be used for construction, preservation, and maintenance of county roads, bridges, ferry wharves, and "other proper county purposes." Any portion of this tax may be diverted by the county legislative authority to any other county service. In 1991, estimated revenues from this tax amount to $175.1 million prior to diversions; $165.8 million after diversions.

1990 Local Option Taxes

A city street utility tax was authorized in 1990 which can fund up to 50 percent of the maintenance and operations budget. The rate is capped at the equivalent of $2 per employee per month for businesses and $2 per housing unit per month. As of January, 1991, no city had enacted this new tax.

A commercial parking tax, also authorized in 1990 for counties or cities (the tax cannot be implemented by both) which can be used for general transportation purposes. No jurisdiction has implemented this tax yet.

Motor vehicle excise and employer taxes for HOV systems were authorized in 1990 for King, Pierce, and Snohomish counties. The motor vehicle excise tax can be set at a level up to 15 percent of the state's base rate (2.0 percent). The employer tax can be up to $2 per employee per month. If both sources are used, revenues cannot exceed the amount that would be generated

from the full 15 percent MVET tax alone. Funds must be used for HOV lanes, employer programs which support HOV use, and commuter rail. These taxes were not yet implemented as of January, 1991.

Local option fuel taxes were authorized in 1990 to be applied on a countywide basis and used for construction, maintenance and operation of city streets, county roads, state highways, and ferry operation. Up to ten percent of the statewide fuel taxes can be imposed (or 2.3 cents per gallon). Voter approval is required for this tax, and no county has enacted it as of yet. It is estimated that if these taxes were fully imposed statewide, an estimated $56 million could be generated.

A countywide motor vehicle license fee was authorized in 1990. Up to $15 per vehicle may be collected and used for general transportation purposes including highways, public transportation, and planning and design. This option has the potential to generate $47 million (estimated for FY 1992) statewide. King and Snohomish counties have authorized this fee.

Transit agencies in King, Pierce, Snohomish, Thurston, Clark, and Spokane counties may enact motor vehicle excise taxes (up to 0.8 percent of value), employer taxes of up to $2 per employee, or sales and use taxes up to one percent of purchase price. Revenues must be used for planning, constructing, and operating high capacity transportation (HCT), commuter rail, and feeder transportation systems. These taxes must be coordinated with any county HOV tax options – the total MVET for the two cannot exceed 0.8 percent and the employer tax can be used for one or the other, but not both. As of January, 1991, no transit agency had enacted the HCT tax options.

Other

Counties and cities may form Road Improvement Districts (RIDs) and Local Improvement Districts (LIDs) to support specific packages of infrastructure improvements through special property tax levies. Voter or property-owner approval is required.

Table 2.1 summarizes the different Federal, state, and local funding sources described above.

Table 2.1 Funding Sources for Local Jurisdictions

Program	1991 Local Funding	Purpose	Available to: Cities	Counties	Allocation Method
Federal Funding Sources					
Federal-Aid Urban System	$12.6M	Urban street and bridge improvements; pedestrian, bicycle, transit, and park & ride facilities	X	X	Based on urban population
Federal-Aid Secondary	8.0	Rural street and road improvements		X	To counties based on FA secondary mileage
Bridge Replacement	16.9	Bridge replacement and reconstruction	X	X	Competition based on statewide priority
Hazard Elimination	1.8	Improve high-accident locations	X	X	Competition based on statewide priority
R/R Crossings	2.2	Reduce accidents at railroad crossings	X	X	Competition based on statewide priority
*Emergency Relief	2.0 typical	Repair damage to FA system due to natural disaster or catastrophe	X	X	Based on actual cost of eligible work

* *Not a regular funding program. Available on emergency basis only. 100% funding within 90 days of disaster occurrence. Repairs performed beyond 90 days after disaster occurrence funded at current program participation ratio for federal aid system affected.*

Table 2.1 Funding Sources for Local Jurisdictions (continued)

Program	1991 Local Funding	Purpose	Available to: Cities	Counties	Allocation Method
State Funding Sources					
Rural Arterial Program	14.5	Correction of deficiencies		X	Among regions based on rural land area and mileage; within regions by regional priority
County Arterial Preservation Program	12.0	Pavement preservation		X	Based on paved arterial lane miles
Urban Arterial Trust Account	35.0 (91-93)	Improvements/ construction of urban arterials	X	Urban	Based on population, vehicle miles, needs
Transportation Improvement Account	40.0	Urban: congestion/growth Small cities: Correction of deficiencies	X	Urban	Statewide priority with regional floors
Public Works Trust Fund	36.0	Non-growth-related projects	X	X	Statewide priority
Community Economic Revitalization Board	varies	Infrastructure related to private development	X	X	Statewide priority
Community Development Block Grants	8.5	Projects which benefit low/mod income households	X	X	Statewide priority
Gas tax for cities (excl. accounts above)	$62.0M	Street maintenance, new construction, and improvements	X		2.46¢ - Based on urban population
Gas tax for counties (excl. accounts above)	106.0	Construction and maintenance		X	4.42¢ - Based on population, road costs, and needs

Table 2.1 Funding Sources for Local Jurisdictions (continued)

Program	1991 Local Funding	Purpose	Available to: Cities	Counties	Allocation Method
Local Funding Sources					
Property tax: County Road Levy	$166.0M	Constr, preserv, maint of roads, bridges, wharves, etc.		X	Can be diverted to other purposes
City Street Utility	NA	Maintenance and operations	X		No city has enacted so far
Commercial Parking Tax	NA	General transportation	X	X	City or county, not both None implemented so far
Local Option Tax for HOV	NA	HOV lanes and programs, commuter rail		X	Motor vehicle excise tax or employer tax, for King, Pierce, Snohomish Cos. Not yet implemented.
Local Option Fuel Tax	0.0	Constr, maint, operation of streets, hwys, ferries	X	X	County-wide voter approval needed. No co. has enacted
Motor Vehicle License Fee	47.0 (FY92) (est. potential)	General transportation		X	Authorized in King and Snohomish Cos. so far
RIDs/LIDs	NA	Local road or infra-structure improvements	X	X	Special-purpose property tax levies with voter approval

3.0 Description of Local Programming Processes

3.0 Description of Local Programming Processes

This chapter synthesizes the results of the case studies and describes the structure and methods use for programming in the eleven jurisdictions surveyed. Figures 3.2 through 3.12 at the end of this chapter present summary information for each of the case study sites. Detailed case studies are provided in Appendices A (Counties) and B (Cities).

■ 3.1 Needs and Priorities

There is strong emphasis in all of the case study jurisdictions on maintenance and preservation of existing infrastructure, and on safety projects. In high-growth, congested areas, emphasis is also placed on operational and capacity improvements, and in some cases, projects which support high-occupancy vehicles. In low-growth areas, preservation is the dominant activity, though opportunities to support economic development through infrastructure improvements can be high priority as well. In agricultural areas, establishment of adequate farm-to-market road networks responding to increased road usage as a result of rail abandonment is a key issue. Multimodal approaches are important in Seattle, King County, and Redmond, and transportation policies reflect this. For example, Seattle has a policy of giving priority to "moving people" rather than "moving vehicles." Priority ranking systems in each of these areas assign extra points for projects that HOV, pedestrian, and bicycle

provisions. Other priorities in cities such as Seattle and Redmond are related to protecting neighborhoods from spillover traffic and promoting a pedestrian-oriented downtown area.

Differences in programming processes among jurisdictions reflect a wide spectrum of needs and priorities. The diversity of needs affects the types of projects considered, the specific categories used for programming, the manner in which funds are allocated, and the types of criteria used for prioritization. Aside from differences based on growth trends and congestion levels, other factors affect local priorities:

- The backlog of structural repair needs;
- The age of roads and bridges;
- Local patterns of traffic growth and the degree to which road standards have been upgraded to be consistent with this growth;
- Vehicle fleet characteristics; for example, the share of heavy trucks;
- Accident rates and local safety concerns;
- Weather patterns and weather-related damage to infrastructure;
- The mix of land use;
- Rail abandonments;
- The presence of public transit services;
- The nature of the economic base, and associated infrastructure support requirements (e.g., farm-to-market roads, port access, etc.);
- Growth and development objectives and associated transportation strategies (including growth management and concurrency);
- Needs for intermodal linkages (water/air/rail/highway).

■ 3.2 Policy and Planning Guidance

Most of the case study jurisdictions did not have a formal set of policies which direct how funds are to be allocated. In the larger cities and counties, ordinances and council resolutions sometimes define priorities,

fund allocation methods and prioritization criteria. In smaller jurisdictions, programming methods tend not to be formally codified.

In both King County and Seattle, explicit policy statements did exist regarding the priority order of different objects. In King County, priorities have been established by the King County Council in this order: safety projects, maintenance projects, accommodating and enhancing of transit, increasing capacity to support existing development, and increasing capacity to support future development. In Seattle, priorities for allocation of discretionary (gas tax) funds were to first maintain system preservation programs (major maintenance), then to fund safety-related and "customer-service oriented" projects, and finally to fund improvement projects where outside grants can be leveraged. In both Seattle and King County, these priorities were not codified in local statute; nor were there strict allocation formulae based on the policies. Rather, stated policies served as a basis for program review.

There was considerable variation in the degree to which plans were used as the basis for programming of improvements. Some jurisdictions had almost no established, up-to-date plans; others had well-established planning processes featuring extensive community participation and coordination with other jurisdictions. Where plans did exist, they were relied upon for capital project identification and prioritization. Not surprisingly, larger, growth areas tended to rely more heavily on plans for project identification, whereas smaller, rural areas relied more on the judgement of planning and engineering staff, and on ad-hoc public input.

Most jurisdictions rely on WSDOT and CRAB resource materials on design standards for different functional classes of roads. Some have developed their own design standards for local access roads.

■ 3.3 Programming Processes

Programming transportation improvements for jurisdictions involves the following steps:

- Establishment of program categories based on funding source, type of project, or a combination;
- Identification of needs and candidate projects within each category;

- Prioritization of candidate projects within categories;
- Selection of projects based on priority and funding constraints.

Local jurisdictions have developed a variety of programming and prioritization methods which vary according to local needs and priorities, the size of the road program, and the amount of local discretionary funds. While programming methods vary significantly among jurisdictions, several common elements were found in many of the case study sites. Figure 3.1 presents a "generalized" local programming process to provide a framework for understanding similarities and areas of variation.

Most jurisdictions allocate funds to routine maintenance first, and use remaining funds for capital improvements. However, the definition of which activities are covered in the maintenance budget, and the level of maintenance which is done varies. Regular preventative maintenance programs for pavements were emphasized more in counties than in cities.

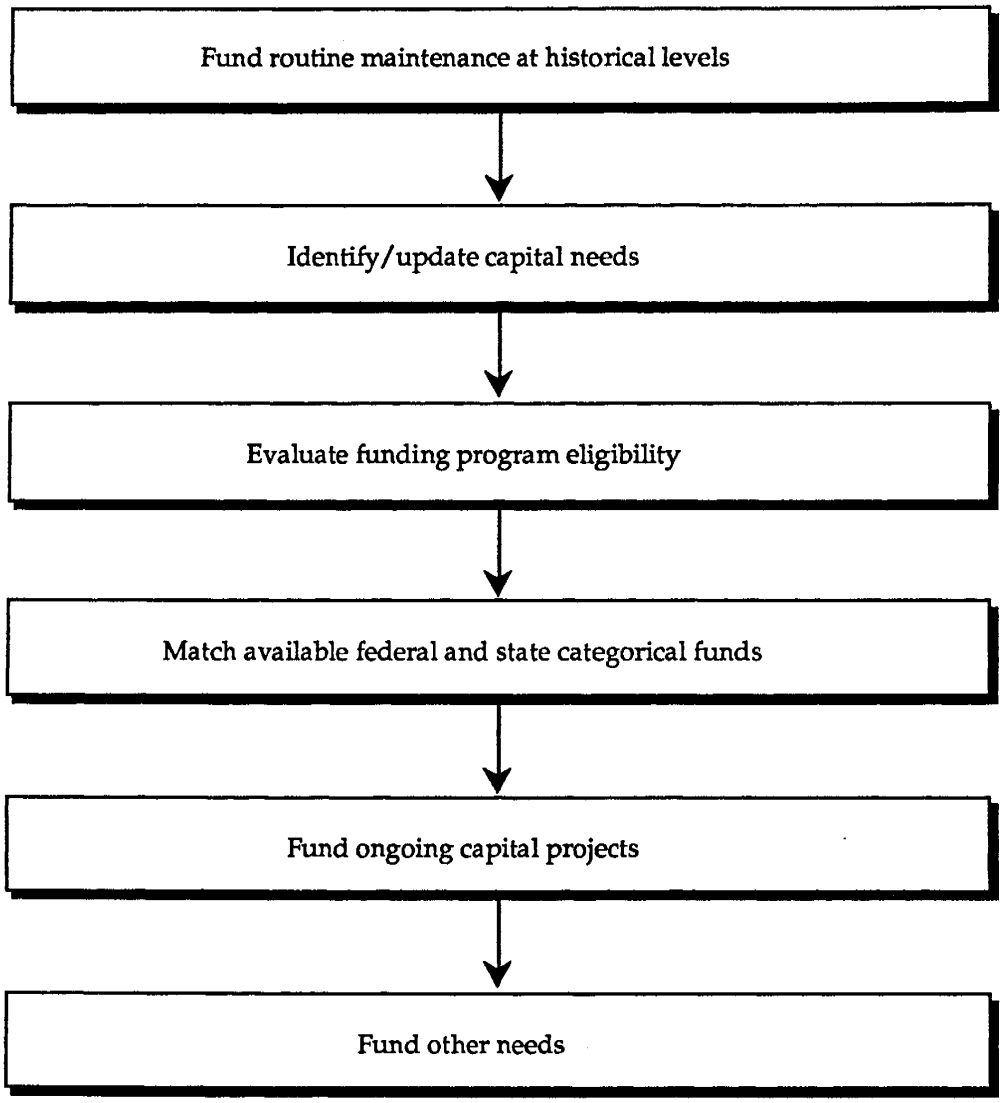
The process of identifying capital improvement needs also varies considerably. Smaller jurisdictions rely on the public works engineers who know the roads to identify what needs to be done. Larger jurisdictions with complex and sometimes conflicting sets of priorities rely on a planning process. All of the jurisdictions surveyed use some form of pavement management system to identify road surface conditions. In most cases, these systems simply produce condition ratings. In a few cases, they are used to recommend appropriate treatments.

All jurisdictions surveyed try to maximize funding for road projects from outside sources. Thus, each identified need is evaluated for eligibility for Federal and state funding, and funds are set aside to provide the necessary local match. The WSDOT Local Programs Division provides valued assistance to local jurisdictions in matching of available funding sources to needs.

FAU and FAS projects are selected based on local needs. Redmond uses FAU funds primarily for new traffic signals; Seattle uses these funds to support pavement resurfacing and the ridesharing program. In King County, FAU funds are prioritized by the King Subregional Council based on a formal ranking method. Bridges are inspected and those which are structurally or functionally deficient and eligible for Federal BR funds are identified. As noted earlier, bridge projects are prioritized on a statewide basis. Projects eligible for Federal Railway-Highway Crossing (RR) or Hazard Elimination (HE) funds are also identified and submitted to the WSDOT Local Aid engineer for consideration.

Jurisdictions select urban arterial and rural collector projects which are eligible for RAP and UATA based on the priority systems which have been established for these programs in order to maximize their chances of

Figure 3.1 Generalized Local Programming Process



obtaining funding. In most cases, selected projects are considered high priority from the local perspective, although some differences in project selection might result if local priority methods were to be used.

Jurisdictions are aware of TIA, PWTF, and CERB program opportunities, and recognize projects that fit well within the criteria of these programs.

For improvements to local access roads or streets, which are not eligible for state and Federal funding, most jurisdictions use Local Improvement Districts (LID) or Road Improvement Districts (RID). In many cases, these are negotiated to include a public match – which is set aside along with the match for Federal and state funds.

Once all potential state, Federal, and private funding sources are leveraged, remaining funds are allocated based on local priorities. In many of the case study sites, few projects were funded with 100 percent local discretionary monies. Continuation of ongoing projects is typically a priority for use of these funds.

■ 3.4 Program Categories

County and city programs tend to be structured around Federal and state funding sources which cover particular classes of roads or types of projects. For example, it is common to see categories for FAU, urban arterials, rural arterials, bridges, and railroad crossings.

Where there is a reasonably large amount of discretionary funds available after Federal and state funds have been matched, categories for allocation of discretionary funds are sometimes established based on project type. Categories vary from jurisdiction to jurisdiction – examples include parking meter replacement, pavement resurfacing, pedestrian improvements, gravel roads, bikeway development, urban access street improvement, sidewalk improvement, paths and trails, and safety improvements. These categories tend to make up a small portion of the road budget, and are typically used to set aside small amounts of funds for groups of relatively low cost improvements. Budgets for such categories are sometimes based on need estimates or multi-year infrastructure rehabilitation plans.

It is important to note that the new local option revenue sources offer the potential for both cities and counties to dramatically increase the amount of discretionary funds available for road improvements. However, because these were authorized fairly recently, and require (in some cases) voter approval, it is too early to assess the extent to which they will be applied.

Some jurisdictions have defined project "type" categories which are used either to establish appropriate priority criteria, or simply for reporting purposes. Many jurisdictions have categories for contingencies, and reserve funds for Federal and state matching and joint projects.

Because funding levels for major program categories are externally determined, programming and prioritization emphasizes within-category choice rather than cross-category tradeoffs. For those funding sources with formula based allocations, budgets can be established and projects are selected within the budget. For funding programs with competitive allocation methods, jurisdictions are aware of the total amount of funding available on a statewide and sometimes regional basis, and select a number of eligible candidate projects with costs equal to or exceeding local expectations of the portion of available funding which could potentially be "captured."

■ 3.5 Needs Identification

The process of identifying needs and candidate projects varies among jurisdictions. At all levels of government, road engineers play an important role in surveying conditions and scoping out projects. At the state level, a pavement management system is used to identify deficiencies. Pavement management systems (PMS) are commonly used in the medium-to-large sized cities and counties as well. Certain funding programs have resulted in a standardized approach to needs identification across jurisdictions – for example, cities and urban counties submit information on urban arterials to TIB, which determines deficiencies based on deviations from specified standards. Bridge rehabilitation and replacement needs are also identified in a standardized fashion due to statewide inspection and reporting procedures.

■ 3.6 Prioritization Methods

Four of the eleven jurisdictions surveyed had developed their own formal ranking method for projects. In each case, a number of evaluation criteria were established, along with guidelines for assigning points to projects for each criteria. Some of the methods use a set of weights to reflect different degrees of importance for the various criteria.

King County has the most formalized method of the case study sites – all capital projects are evaluated according to a broad set of criteria, and programming of projects is based heavily on the priority rankings. Redmond uses a similar, but less elaborate method for rating of major street improvements and intersection improvements. Seattle developed a ranking method as part of its Comprehensive Transportation Program effort in 1984. Yakima County developed a rating method for rural access road improvements.

While most jurisdictions have not developed their own ranking methods, priority criteria which have been defined for the UATA and RAP programs are widely used for urban arterial and rural collector project selection. For both of these programs, five prioritization factors are required by legislation:

- Structural ability to carry loads,
- Capacity to move traffic at reasonable speeds,
- Adequacy of alignment and related geometrics,
- Accident experience, and
- Fatal accident experience.

The UATA prioritization method defines minimum tolerable conditions (MTC's) for pavement condition, pavement and roadway width, accident rates, speed and volume/capacity for different functional classes and regions. Projects are grouped according to the number of MTC's exceeded, average daily traffic (ADT) and functional class, and priorities are set within each group based on a set of established weights on seven different criteria: operating speed, volume capacity ratio (V/C), accidents per mile, pavement condition, people-carrying capacity (bus service), pavement width, and road width.

For the Rural Arterial Program, different prioritization methods have been defined for five regions of the state. While each region uses a similar set of criteria (structural condition, accident rates, traffic volume, geometrics), weights given to different criteria vary. For example, the Puget Sound Region's method puts relatively more weight on traffic volume and accidents, whereas the Southwest Region's method emphasizes structural and pavement surface condition.

3.7 Interjurisdictional Coordination

The nature and importance of interjurisdictional coordination varies from area to area. In general, more urbanized, growing jurisdictions have taken steps to establish formal mechanisms for interjurisdictional planning, and coordinated transportation projects. Smaller, more rural areas rely primarily on informal coordination mechanisms. All jurisdictions share their six-year plans with other affected agencies.

Examples of successful joint planning efforts exist, such as the Eastside Transportation Program (ETP). The ETP involved the cities of Redmond, Bellevue, Bothell, Kirkland, and Issaquah; WSDOT; King and Snohomish Counties, the Puget Sound Council of Governments and local business community representatives. The ETP produced a comprehensive set of policies, programs and projects to address congestion problems in the area. This program developed consensus on approaches to problems and priorities, and resulted in the definition of joint projects. Joint planning efforts of this nature are effective mechanisms for interjurisdictional coordination, particularly where the problems are complex and involve a multimodal approach.

Figure 3.2 King County

1990 Population:	513,298 (unincorporated)
Growth:	2% 1980-90 (+19% including incorporated areas)
Lane Miles:	5655 24% arterial 62% urban
1990 Road Expenditures:	$77.2 million
1990 Construction Expenditures:	$23.5 million
Gas Tax Distributions:	$11.5 million
Road Levy:	$32.7 million

Priorities

- Safety
- Maintenance/preservation
- Transit/HOV
- Congestion

Planning Inputs

- Comprehensive plan
- Community plans
- Transportation plan
- Interjurisdictional (e.g. ETP)
- Pavement/infrastructure management system

Program Structure

- 5 ongoing special-purpose programs
- Reserve for joint projects, TIA match
- Remaining funds on project basis

Methods

- Ranking of all projects based on 20 criteria
- Criteria groupings: traffic, safety, physical, service, impact and growth
- Use weights to reflect relative importance
- Adjust based on funding, geographic balance, public input
- FAU projects prioritized county-wide with similar method

Figure 3.3 Grays Harbor County

1990 Population:	24,987 (unincorporated)	
Growth:	1% 1980-90	
Lane Miles:	1,144 40% arterial	3% urban
1990 Road Expenditures:	$10.0 million	
1990 Construction Expenditures:	$3.0 million	
Gas Tax Distributions:	$1.3 million	
Road Levy:	$1.5 million	

Priorities

- Emergency repairs/flood damage
- Safety
- Structural repair-bridges and roads

Planning Inputs

- Annual accident report
- Road rater for pavement condition
- Maintenance Management System (MMS)

Program Structure

- Maintenance and construction

Methods

- Regular seal coats and overlays-cycle basis
- Priority rating based on project type, traffic and accident rates
- Program based on fund eligibility and scheduling considerations

Figure 3.4 Spokane County

1990 Population:	165,442 (unincorporated)			
Growth:	9% 1980-90			
Lane Miles:	6,266	31% arterial	23% urban	49% gravel
1990 Road Expenditures:	$24.3 million			
1990 Construction Expenditures:	$9.2 million			
Gas Tax Distributions:	$7.6 million			
Road Levy:	$10.2 million			

Priorities

- Maintenance/preservation
- Gravel roads (particularly in low-income areas)
- Economic development

Planning Inputs

- Comprehensive plan
- Road Map project - subarea land use/transportation plans (in progress)

Program Structure

- Maintenance/construction
- Construction has 6 categories
  - Urban (FAU, TIB)
  - Pathway (local)
  - Road Improvement Districts (RIDs)
  - Safety (Federal HE, local)
  - Bridge (Federal BR, local)
  - Rural (RAP, local)

Methods

- Do regular overlays based on condition ratings - "worst first"
- Use RAP and UATA ranking methods
- Select projects based on funding availability, including RID's
- Consider urban/rural and geographic distribution of projects
- Consider scheduling, emergency needs, land-use plan

Figure 3.5 Benton County

1990 Population:	27,842 (unincorporated)			
Growth:	-14% 1980-89			
Lane Miles:	1,777	37% arterial	16% urban	38% gravel
1990 Road Expenditures:	$4.5 million			
1990 Construction Expenditures:	$1.1 million			
Gas Tax Distributions:	$1.8 million			
Road Levy:	$2.1 million			

Priorities

- Maintenance
- Bridges
- Gravel roads
- Rural mobility — farm-to-market system
- Economic development

Planning Inputs

- Comprehensive plan
- Road-rater for pavement condition

Program Structure

- Split by 100% locally funded vs. Federal/state match
- 7 program categories for local: bridge, RR crossings, gravel roads, etc.

Methods

- Use RAP and UATA ranking methods
- Select arterial projects based on funding availability
- Rank gravel roads based on condition
- Consider emergency needs, public concerns

Figure 3.6 Yakima County

1990 Population:	88,241 (unincorporated)			
Growth:	6% 1980-90			
Lane Miles:	3,571	45% arterial	10% urban	40% gravel
1990 Road Expenditures:	$10.4 million			
1990 Construction Expenditures:	$3.1 million			
Gas Tax Distributions:	$3.8 million			
Road Levy:	$4.8 million			

Priorities

- Maintenance
- Safety
- Gravel roads
- Economic development
- Link to airport

Planning Inputs

- Comprehensive plan
- Pavement Management System
- County Design Standards - emphasis on structural strength

Program Structure

- Maintenance and Construction
- Categories for RAP, Federally funded arterial projects
- Bridge reconstruction, rural access road construction, urban access RID, locally funded arterials and safety
- Category for RAP, TIB, FAS match reserve

Methods

- Regular allocation to safety, bridge and gravel road programs
- Match federal, state funds
- Match RIDs
- Use RAP, UATA criteria for rural and urban arterials
- Prioritize locally-funded arterial projects based on pavement condition, safety, alignment issues, growth patterns, public input
- Prioritize rural access (gravel) by traffic, accidents, maintenance costs, right-of-way width, and system continuity

Figure 3.7 Adams County

1990 Population:	6,466 (unincorporated)
Growth:	7% 1980-1990
Lane Miles:	3,482
1990 Road Expenditures:	$3.9 million
1990 Construction Expenditures:	$815,364
Gas Tax Distributions:	$1.0 million
Road Levy:	$824,483

Priorities

- Preservation/maintenance
- Gravel roads

Planning Inputs

- Professional expertise
- Public input

Program Structure

- Road and bridge construction
- Road and bridge maintenance
- General administration, reimbursables, paths and trails

Methods

- RAP projects: traffic volume, road usage, road type, number of accidents
- Consider emergency needs, public concerns

Figure 3.8 Seattle

1990 Population:	516,259
Growth:	5% 1980-90
Road Miles:	1,652 29% arterial
1990 Road Expenditures:	$89.4 million
1990 Construction Expenditures:	$37.7 million
Gas Tax Distributions:	$12.0 million

Priorities

- Infrastructure repair/rehabilitation
- Safety
- Transit/HOV
- Operational improvements
- Neighborhood protection

Planning Inputs

- Seattle Comprehensive Transportation Program
- Comprehensive Plan (under development)
- Pavement Management System
- Major Maintenance Plan

Program Structure

- Major maintenance/development
- Major maintenance: 15 programs and stand-alone projects
- Major maintenance: programs include resurfacing, guardrail rehab., parking meter replacement, etc.
- Development: 10 program categories & stand-alone projects
- Development programs include signals, bicycle improvements, rideshare program, etc.
- FAUS used for arterial major maint., rideshare program
- Large projects funded through TIB, PWTF, LIDs, bonds

Methods

- Fund ongoing maintenance programs using FAUS, needs in major maintenance plan
- Major maintenance needs are prioritized based on safety, structural integrity, maintenance cost reduction
- Critical needs are identified
- Projects underway are given priority
- Development, major maint. projects selected based on funding availability (UATA, TIA, PWTF)
- SCTP developed priority process for improvements, not used due to lack of discretionary funds
- SCTP method ranks projects based on 11 criteria
- Criteria include cost-effectiveness, compatibility with plans/policies, neighborhood protection, facilitation of alternate modes

Figure 3.9 Shelton

1990 Population:	7,241
Growth:	-5% 1980-90
Lane Miles:	138 19% arterial
1990 Road Expenditures:	$2.5 million
1990 Construction Expenditures:	$1.0 million
Gas Tax Distributions:	$184,000

Priorities

- Road repair
- Economic development

Planning Inputs

- Shelton Action Plan (pavement needs)

Program Structure

- Maintenance/construction
- Maintenance budget set based on historical levels
- Construction: 1-2 projects/year

Methods

- Use UATA criteria for arterials
- Do LID's where possible for local access streets
- Look for TIA, CERB, PWTF - eligible projects

Figure 3.10 Redmond

1990 Population:	35,800
Growth:	54% 1980-90
Lane Miles:	221 24% arterial
1990 Road Expenditures:	$18.6 million
1990 Construction Expenditures:	$10.5 million
Gas Tax Distributions:	$810,000

Priorities

- Safety
- Congestion
- Preservation
- Reducing through-traffic in downtown
- Growth
- Support for transit/HOV

Planning Inputs

- Community development guide/transportation plan
- Interjurisdictional (e.g. ETP)
- Pavement Management System

Program Structure

- Maintenance/construction
- Maintenance includes resurfacing
- Special construction programs: sidewalks, neighborhood traffic control, misc.
- Remaining funds on project basis
- Projects requiring general funds, gas tax go through CIP process

Methods

- Use PMS for resurfacing projects
- Ranking of major street improvements, intersection improvements based on 11 criteria
- Criteria: safety, design standards, traffic/level-of-service, pavement condition, circulation, functional class, cost-benefit, public interest, service provided, environmental
- Different number points for each criteria based on project type - max. of 100
- Ranking used to prioritize within project categories
- Programming based on rank, funding, scheduling, coordination with development projects

Figure 3.11 Spokane

1990 Population:	177,196
Growth:	3% 1980-90
Lane Miles:	1785 32% arterial
1990 Road Expenditures:	$22 million
1990 Construction Expenditures:	$11 million
Gas Tax Distributions:	$4.0 million

Priorities

- Economic development
- Preservation
- Gravel roads

Planning Inputs

- Arterial street plan
- Pavement Management System

Program Structure

- Preservation
- Improvements

Methods

- Preservation includes skimcoating less than 1", overlays, patching, grading
- Remaining funds used for cleaning, minor bridge repairs, snow and ice control, and resurfacing
- Use PMS for resurfacing projects
- Use UATA and TIA ranking methods
- Select projects based on likelihood of funding availability including LID's

Figure 3.12 Vancouver

1990 Population:	46,380
Growth:	8% 1980-90
Lane Miles:	432 19% arterial
1990 Road Expenditures:	$6.6 million
1990 Construction Expenditures:	$2.2 million
Gas Tax Distributions:	$1.0 million

Priorities

- Maintenance
- Operations
- Economic development

Planning Inputs

- Capital Improvement Program
- Community input

Program Structure

- Preservation
- Operations
- Reconstruction

Methods

- Use PMS to identify needs and costs
- Project prioritization based on daily observation of street system
- Has identified funding sources for all maintenance and construction needs
- Prioritization process driven by staffing constraints

4.0 Key Issues

4.0 Key Issues

Based on the findings of the case studies, this chapter addresses the following four issues:

- How do local programming processes compare to those used at the state level?
- What influence do current state regulations and funding programs have on local programming processes?
- How well is coordination between WSDOT and local jurisdictions working?
- How consistent are programming methods among jurisdictions, and would increased consistency be desirable?

Each of these issues needs to be carefully considered in order to develop recommendations for improvements to the state programming process which take into account potential impacts on local jurisdictions.

4.1 Comparison of State and Local Programming Processes

Program Size

The most obvious difference between highway programming at the state and local levels is in the size and composition of the respective highway networks, leading to a much larger program in terms of dollars and numbers of projects for the state than individual local jurisdictions. Programming of improvements for the 7,000 mile state highway system involves a 1990 construction budget of nearly $400 million. In contrast, the largest county (King) has a 2,700 mile road network and a (1990) road construction budget of $73 million. The largest city (Seattle) maintains 1,650 miles of roads, and had a construction budget of roughly $44 million in 1989.

The capital budgets of most Washington cities and counties are quite small relative to these figures. Grays Harbor, the 13th largest county has an unincorporated area population of 24,106, maintains 560 miles of roads, and in 1991 has a road construction budget of under 7 million. Shelton, the 47th largest city in the state has a population of 7,620, 68 miles of streets, and a 1990 road construction budget of under $1 million. Roughly one-half of the 39 counties in the state have a population under 50,000; almost one-third of the counties have less than 20,000 residents. Nearly 80 percent of the 268 cities in the state have a population under 5,000. These figures illustrate the substantial differences among jurisdictions, and among different cities and counties in program size and scope. These differences determine the degree to which a formalized approach to programming is used.

Funding

As shown in Table 4.1, there is a larger set of funding options at both the county and city levels than at the state level. The process of identifying funding sources for candidate projects is clearly more complex at the local level than at the state level. Adding to this complexity is the fact that many local jurisdiction funding programs award monies to specific projects on a competitive basis, rather than by formula. This tends to have a significant influence on how programming is done at the local level.

Another important difference among jurisdictions is the amount of discretionary funds available for allocation to any road-related project or purpose. The state has a significant amount of discretionary funds relative to local jurisdictions, and, based on the very limited sample of case study sites, counties appear to have a higher level of discretionary funds in their road capital budgets than do cities. Where there is a relatively small

Table 4.1 Major Funding Sources for State, County, and City Transportation Improvements

State

	Gas Tax/MVET	FAP	FAS	FAI	FBR	HE	R/R	(See next page for key to programs)
A Preservation	X	X	X			X	X	
B Interstate	X			X				
C Non-Interstate Capacity	X	X				X	X	
H Bridge	X				X			

County

	Discretionary*	RID	FAU	FAS	FBR	HE	R/R	UATA	TIA	RAP	CAPP	PWTF	CERB
Urban Arterial/Collector	X		X			X	X	X	X		X	X	X
Urban - Local Access	X	X										X	X
Rural - Major Collector	X			X		X	X			X	X	X	X
Rural - Minor Collector	X					X	X			X	X	X	X
Rural - Local Access	X	X										X	X
Bridge			X		X				X	X		X	X

City

	Discretionary**	LID	FAU	FBR	HE	R/R	UATA	TIA	PWTF	CERB
Arterial/Collector	X		X		X	X	X	X	X	X
Local Access	X	X							X	X
Bridge	X		X	X				X	X	X

* Includes property tax, gas tax, general funds, vehicle registration fee, harvest tax, timber tax, local excise tax, developer fees, new local options.

** Includes gas tax, general funds, vehicle registration fee, developer fees, local excise tax, new local options.

Table 4.1 Major Funding Sources for State, County, and City Transportation Improvements (continued)

Key:	MVET	Motor Vehicle Excise Tax
	FAP	Federal-Aid Primary
	FAI	Federal-Aid Interstate
	FAS	Federal-Aid Secondary
	FBR	Federal Bridge Discretionary/Replacement & Rehabilitation
	HE	Federal Hazard Elimination
	R/R	Federal Rail/Highway Crossings
	FAU	Federal-Aid Urban
	RAP	Rural Arterial Program
	CAPP	County Arterial Preservation Program
	UATA	Urban Arterial Trust Account
	TIA	Transportation Improvement Account
	RID	Road Improvement District
	LID	Local Improvement District
	PWTF	Public Works Trust Fund
	CERB	Community Economic Revitalization Board

amount of discretionary funding, programming categories tend to be aligned with funding programs, and there is little incentive for developing prioritization methods which make tradeoffs between categories. Discretionary funds tend to be allocated for the required local match of the various funding programs. Where there is a sizeable pool of funds which may be allocated on a discretionary basis, there is more of a tendency to develop categories based on project type and develop structured methods for prioritization of projects within and across categories.

Needs and Priorities

The nature and diversity of needs and priorities which must be addressed has a major influence on the structure of programming methods in different jurisdictions. Programming processes at the state level must take into account tremendous differences in the conditions of different geographic areas. Within individual cities and counties, there is less diversity, though competing needs do exist based on size and location.

Planning and Policy Guidance

One difference between the state and some of the city and county case study sites is the extent to which planning and programming processes are linked. Some cities and counties have a very strong community planning process involving significant amounts of public participation. These processes tend to be the source of many candidate projects, and some jurisdictions explicitly give extra weight to projects which have been included in adopted plans. At the state level, highway programming has not been as strongly tied to plans, though current efforts to expand advance planning at WSDOT are providing the basis for strengthening the links between planning and programming.

Program Structure and Categories

Priority programming legislation requires development of six-year programs at both the state and local level. At the state level, however, the legislation goes much further in establishing program categories, defining how funds are to be apportioned among categories of improvements and setting forth the criteria to be used for prioritization within each category.

The state's programming categories are structured around a combination of project type (highway preservation, highway capacity, bridges) and funding source (Interstate vs. other). Budgets are established for each category, and separate prioritization methods are defined for selecting

projects within the different categories. Based on the case studies, cities and counties tend not to have a strong category-based structure for programming of funds in comparison to the state. While all of the jurisdictions surveyed make a clear distinction between maintenance and construction budgets, most do not have major program categories with separate budget allocations within construction.

Prioritization and Project Selection

Prioritization methods are highly structured at the state level. Based on general criteria established in legislation, specific priority models have been defined to rank projects within each category. At the local level, the formality of prioritization methods varies according to program size. The priority methods which have been defined for the UATA program and the RAP program (which differ by region) are used extensively by local jurisdictions. In some cases, these are used to prioritize projects which are being locally funded.

While it is difficult to generalize based on such a small sample, differences were noted in the type of criteria used by WSDOT versus those used by the four local jurisdictions which have developed their own ranking methods (Seattle, King County, Redmond and Yakima County).

WSDOT prioritizes preservation projects based on pavement condition and accident rates. For capacity projects, a measure of project benefit is calculated based on traffic congestion change, accident reduction, and traffic volume. This figure is divided by the square root of the estimated annualized cost of the project. In contrast, prioritization methods in King County, Seattle, and Redmond include a much broader array of criteria. Examples of criteria used in these three jurisdictions which are not part of state priority models are:

- Physical characteristics such as lane widths and shoulder widths;
- Adjacent land use (higher priority for more intense uses);
- System continuity, gap completion, circulation improvement;
- Support for HOV, and non-motorized travel;
- Availability of right-of-way;
- Impacts on the environment or sensitive areas;
- Support for local plans and policies;

- Support for improved mobility and accessibility (including general, elderly and handicapped, or emergency vehicles);
- Amount of community support; and
- Neighborhood protection.

While many of these criteria are by nature quite subjective relative to criteria such as traffic levels and accident rates, special rating guides are used to establish a basis for assigning points. For example, King County assigns points for the "Supports Plans & Policies" criteria as follows:

- 3 points (highest) – Identified in plans (community plans or transportation plans) as a higher priority recommendation.
- 2 points – Medium priority projects in plans or new projects not in plans but which enhance King County growth and transportation policies.
- 1 point – Lower priority projects in plans.
- 0 points (lowest) – Projects inconsistent with adopted plans and policies.

Another difference between WSDOT and the four jurisdictions with formal project ranking methods relates to how project costs (both capital and maintenance) are considered. Priority methods in Seattle and Redmond include consideration of project cost vs. benefits in priority ranking methods, but in a different way than WSDOT does for Category C. Whereas the WSDOT method calculates a priority rating by dividing benefits by costs, the Seattle and Redmond methods include project cost, cost-benefit, and potential cost reductions as evaluation criteria. Yakima County includes a priority criterion for current road maintenance requirements for ranking of gravel road improvement projects, which serves as a proxy for potential cost reduction. King County's method does not explicitly include project costs.

To summarize, the prioritization methods used at the state level tend to be more structured and formalized than those used by most cities and counties. Some of the larger cities and counties have developed their own priority methods, which include a broader set of evaluation criteria than is used by WSDOT, or in the UATA and RAP programs. These locally-defined criteria include factors which are less quantitative than those used by the state. Regional variations in prioritization methods are reflected both in the UATA and RAP program methods, either through definition of different minimum tolerable conditions on a regional basis, or through establishment of different criteria weights.

4.2 Influence of Current State Regulations and Funding Programs

Local Programming Processes

While opinions vary as to the usefulness of a six-year time horizon for road improvement planning, the six-year programming requirements are generally seen as positive by local jurisdictions, and six-year planning is very much an accepted procedure, even within small, rural jurisdictions. Evidence of a systematic planning process in support of capital programming has come to be expected by local elected officials. Some jurisdictions do all of their capital planning on a six-year basis for consistency.

Variation was found in the consistency of TIP documents submitted to the state, and local capital planning and budgeting documents. In some cases, the six-year TIP is completely integrated with the local budget process; in others it is separate, covering an overlapping but different set of project and revenue categories. Despite the fact that most jurisdictions do not consider the June submittal deadline for the state TIP a problem, the differences in programming cycles between the state and local jurisdictions reinforces the tendency to view the two documents as separate.

Local Programming Structure and Methods

Priority programming requirements at the state and county levels, along with establishment of ranking methods for the UATA and RAP programs, statewide priority methods for selection of Federal bridge and safety projects and areawide ranking of FAUS projects in King County have resulted in widespread familiarity with and acceptance of concepts and methods for prioritization of projects within local jurisdictions. Some jurisdictions have simply adopted the methods defined in state programs for their own use. This same level of familiarity and acceptance is not typically present in other parts of the country.

Federal and state funding programs have a significant influence on local program structure and decision-making processes. Due to the number of Federal, state and local funding sources, and the complexity of eligibility requirements and allocation methods, local programming processes are often structured according to categories based on the nature of the funding source rather than categories based on project type or objective. There is an emphasis on matching available funds, which sometimes conflicts with the establishment of a systematic process for setting priorities among all types of projects.

Some jurisdictions do not have significant amounts of dedicated local funds for transportation, and use most of their gas tax funds to match

Federal and state program grants for specific projects. This means that priority formulas associated with funding programs may have more influence on local projects than local policy or priority-setting mechanisms. As additional discretionary revenues are made available through the new local option taxes, local jurisdictions will have more of an opportunity to develop and apply their own prioritization methods.

The RAP program is viewed as a successful example of the state setting broad policy direction while details on prioritization methods are established through a participatory process of county road officials in each region.

Many jurisdictions feel that the competitive basis for allocation of funds for state programs creates uncertainty and limits their ability to develop accurate plans. It also creates the need for "contingency programming" of local funds which may or may not be required for matching.

Ability to Address Local Needs

Current state and Federal funding programs are addressing needs which are important to local jurisdictions. The Federal bridge, FAUS, FAS, and safety programs and the state UATA, TIA, RAP, and CAPP programs are all viewed as very positive by local officials. Some jurisdictions reported that if there were no "strings" on the use of state and Federal program funds, they would spend them in very much the same way. Others reported that they would focus on different types of projects which were important locally but do not tend to score high with established state and Federal program selection criteria. A number of examples of high priority local needs which are not emphasized in current state and Federal programs were cited:

- Farm-to-market roads;
- Unpaved roads with increasing traffic volumes;
- Local economic development and downtown revitalization;
- Maintenance and preservation of the local access road system;
- Community and neighborhood traffic management; and
- Certain safety projects which would not score highly based on state/Federal criteria, but were nevertheless addressing problems of local concern.

Joint Projects and Interjurisdictional Coordination

At the city and county levels, certain activities to ensure interjurisdictional coordination have been required by Federal and state legislation, and administrative code associated with local funding programs (UATA, RAP, TIA). Cities and counties are required to conduct public hearings prior to adoption of their six-year programs, and must send copies of their six-year plans to affected jurisdictions and agencies. According to TIB administrative code, written acknowledgement is required from each adjacent city, county, and WSDOT district office that it has evaluated the proposed six-year program for the purpose of proposing related arterial improvement projects, in order to contribute to the goal of an integrated and coordinated arterial and highway system. Joint planning with WSDOT or other jurisdictions is required on both urban and rural arterial projects which cross jurisdictional boundaries or connect with the state highway system. Federal transportation planning regulations require development of coordinated transportation improvement programs by metropolitan planning organizations (MPOs).

While legislative requirements for sharing of six-year programs and joint planning has helped to improve coordination, informal coordination is found to be very valuable. The extent to which such informal coordination occurs is highly dependent on individuals and varies among jurisdictions. Some coordination problems still occur where there is no incentive to coordinate and where priorities differ.

The TIA program is viewed as an effective "carrot" for development of projects involving multiple jurisdictions and private interests. This program was designed to encourage interjurisdictional coordination by giving higher priority to multi-agency projects, and requiring consistency with state, regional, and local transportation plans. Several successful project examples were cited by local officials interviewed in the case studies, and it was felt that these projects would not have happened at all, or would have taken longer to begin if TIA did not exist.

The Growth Management Act will be a major force shaping coordinated planning efforts in the future, and case study jurisdictions which are required (or have elected) to plan under this Act all acknowledge that there is considerable work to be done to strengthen regional planning and achieve concurrency between transportation and land use decisions.

Concurrency requirements, in particular, pose a considerable challenge, especially where development in a single jurisdiction affects transportation facilities of several other jurisdictions, and possibly the state's highway system. The need for multi-jurisdictional funding mechanisms for transportation improvements are especially important in view of concurrency. King County's Mitigation Payments System (MPS) is one example of a

potential approach to coordinated establishment of mitigation fees. While the MPS currently only applies to King County roads, it has been designed so that fees for improvements to state and local facilities may be collected in a coordinated fashion.

Jurisdictions surveyed generally support the logic of a strong regional role for coordination of growth management planning, but feel that RTPOs need to be play a stronger decision-making role than MPOs have done in order for this coordination to be effective. Over the next few years, local programming and prioritization processes will have to be adapted to ensure consistency with regional comprehensive plans. The exact mechanisms for this, and the role of RTPOs in the process have yet to evolve.

■ 4.3 Coordination Between WSDOT and Local Jurisdictions

At the state level, priority programming regulations allow WSDOT to deviate from established priorities in project selection in order to coordinate with local agency projects. They also provide an allowance for projects to be delayed in order to allow counties or service districts to develop local funding to pay for additional highway improvements which may be done at the same time as those planned by the department. While no formalized interjurisdictional review process is required for the state's six-year program, informal coordination occurs between district staff and city or county public works staff. WSDOT also participates in multi-jurisdictional planning efforts, such as the Eastside Transportation Program. WSDOT's Local Programs Division serves as an important liaison with local jurisdictions with respect to joint state-local projects and matching of funding to needs.

State and local coordination occurs at three different levels – planning, programming, and implementation. In most of the jurisdictions surveyed, coordination with WSDOT was seen as strong at the project implementation level. A minor issue noted by a few jurisdictions related to differences in state, city, and county fiscal years. Funds for state funded projects sometimes need to be expended by the end of the state fiscal year in June, which is in the middle of the construction season.

At the programming level, there was some frustration about differences in state vs. local priorities – in some of the jurisdictions surveyed, the primary congestion problems are on the state road system. However, competing needs in other areas limit the state's ability to be responsive. Examples were cited of cases where local jurisdictions provided 100 percent local funding for study or design of a project in order to accelerate its progress

in the state pipeline. TIA program funds have also been used to leverage Category C monies for projects which would otherwise have been delayed.

A number of jurisdictions also commented that differences in programming cycles make it difficult to introduce locally initiated projects into the state's programming pipeline. In particular, the fact that WSDOT operates on a two-year cycle rather than an annual cycle has made it difficult to coordinate projects. Some saw the need for the establishment of a more formalized and ongoing process for local project considerations. It was suggested that regular coordination meetings (perhaps on an annual basis) between local jurisdictions and WSDOT district engineers to discuss opportunities for joint projects would be useful.

Local officials in many jurisdictions felt that coordinated advanced planning with WSDOT had been lacking in the past, but has begun to improve in recent years. Steps being taken at WSDOT to devote more resources to planning, and to develop long-range plans for each state route are viewed as very positive. The importance of WSDOT involvement in joint planning efforts as a "team player" was stressed. Several local officials also felt that notice of WSDOT's plans further in advance would help them to develop coordinated projects.

To be successful, coordination must occur not only at the technical and engineering level, but at the policy level as well. It was noted in the case study interviews that policy level coordination with WSDOT is more difficult than with other jurisdictions, since it is sometimes difficult to know who has policy and decision-making authority in the large state department.

■ 4.4 Consistency in Programming Among Jurisdictions

Current Areas of Consistency

Current programming practice at the state and local levels in Washington is consistent in the following ways:

- All levels of government prepare six-year programs of improvements.
- The state and all counties must use priority programming methods for development of the six-year program. (Counties are required to use priority programming methods only for arterials.)

- Federal funding programs impose consistent eligibility requirements and, in the case of bridge and safety programs, statewide priority methods.

- UATA and RAP programs involve consistent priority setting methods for urban and rural arterials. While both of these programs allow for variations from region to region on specific minimum tolerable conditions (UATA) and weighting of evaluation criteria (RAP), they do ensure that project selection is based on the same set of criteria, and that road inventory data is used as the basis for evaluation.

- Requirements for UATA funding have resulted in standardized reporting of urban arterial characteristics statewide.

- All counties are required to maintain road inventory information and report such information to CRAB in a consistent format. The county road log is maintained by CRAB and includes a listing of all roads with lengths, functional class, surface type, volumes, and other characteristics.

- All levels of government use the Federal functional classification system.

- The state Budgeting, Accounting and Reporting System (BARS) defines uniform financial reporting methods for counties, cities, and other local governments.

Currently areas of inconsistency are:

- Different program categories are used in different jurisdictions.

- Different classification systems exist for project types.

- There are differences in the formality and nature of prioritization methods among jurisdictions.

Desirability of Consistency

Before drawing any conclusions about whether the current amount of consistency is adequate, and whether current inconsistencies should be any cause for concern, it is important to address the question of why consistency may be desirable. Two types of consistency need to be distinguished – consistency in program reporting, and consistency in programming methods.

Consistency in reporting of program information facilitates the measurement of program accomplishments. Questions at the state level about how new gas tax revenues are being spent would be easier to address with more consistent and complete reporting of what types of projects are being implemented and which revenue sources are used. Consistency in the format, content, and organization of programming documents among jurisdictions, in terms of what types of projects are included, how projects are classified, and how funding sources are identified makes it easier to compare programs of different jurisdictions. By using a standard project type classification system, expenditures could be summarized according to broader categories (such as capacity and preservation) in order to provide an aggregate picture of the nature of the investments being made. Consideration of new requirements for reporting consistency should weigh the potential benefits, in terms of accountability and communication, against the administrative burden which might be imposed, particularly on smaller jurisdictions.

With respect to programming methods, there is already much standardization for prioritization of Federal bridge and safety projects, and of urban and rural arterial projects on a statewide and regional basis. Consistency in programming methods among jurisdictions is automatically achieved in the UATA and RAP programs through the use of a competitive basis for distribution of funds within regions. Even though some of the larger jurisdictions apply their own local priority methods to rank urban and rural arterial projects, the priority formulas established for these programs are used in virtually all jurisdictions to select projects which have a high probability of being funded.

Methods for programming of Federal-Aid urban, Federal-Aid secondary, gas tax, and local revenues are not standardized. However, it is clear from the discussion in Chapter 2.0 that no single method is appropriate for all jurisdictions. Different budget sizes, needs and priorities, and funding sources have led to different approaches to programming.

Current programming and funding program eligibility requirements have emphasized the application of "good practice" in programming, as opposed to use of standardized methods. These include:

- Use of prioritization methods as a basis for project selection under budget constraints;
- Collection of consistent inventory and condition information to be used in prioritization; and
- Use of pavement management systems to assist in the development of cost-effective pavement preservation strategies.

At the county level, CRAB has defined a set of standards of good practice, and maintains regular communication with counties to promote the use of these standards. No similar mechanism exists at the municipal level, though given the number of cities and the fact that a majority of cities are quite small, there are questions as to whether a similar approach would be workable.

One method which is not currently promoted in any formal manner is the evaluation of projects in a cost-benefit framework. The state uses a cost-benefit approach in the evaluation of Category C projects, and some local jurisdictions consider cost-benefit in their priority rankings. The exercise of arraying the potential benefits of a project and comparing these benefits to the capital, operating, and maintenance costs is a useful one for making tradeoffs among projects. However, it is not currently applied at either the state or local levels on a consistent basis.

Consistency in program methods must also be examined in light of the regional emphasis of the Growth Management Act, and the desire to promote interjurisdictional coordination. If each jurisdiction uses a different priority method, interjurisdictional coordination on projects may be difficult in cases where priorities differ. Experience to date indicates that interjurisdictional coordination may be encouraged by having an interjurisdictional funding source which is allocated based on objective measures of need, or through a program (such as TIA) which provides incentives for interjurisdictional projects. Another helpful strategy is to conduct joint planning processes to identify solutions to shared problems. The Growth Management Act will necessitate more of these efforts. Where meaningful, realistic plans exist, requirements for consistency between programming and plans will be easier to interpret and apply, and will be more effective in achieving the goal of planning and project coordination.

5.0 Findings

5.0 Findings

Local jurisdictions are responsible for maintenance and improvement of 88 percent of the statewide miles of roadway, and 60 percent of the state's Federal-Aid system mileage. Local jurisdictions also receive a significant share of the state's Federal highway and bridge funds. With the recent increase in the gas tax to 23 cents (the city and county share of the gas tax was increased to nearly 11 cents), and the authorization of a variety of new local revenue options, cities and counties will have an increased ability to address roadway needs. At the same time, new growth management, demand management, and Federal environmental regulations are being put in place which create the need for new approaches to planning and programming of road improvements.

With these regulations, as well as the new funding programs which allow for an expanded role for local jurisdictions in road improvement projects, strong coordination among state, regional, and local levels of government is critical. It is therefore timely to consider ways in which planning and programming processes at all levels of government might be adjusted in order to function more effectively in this new environment.

Given the wide variations in size and roadway needs among Washington cities and counties, it is appropriate that there are variations in the programming methods and procedures used by different jurisdictions. However, the case studies suggest a number of steps which would improve state and local coordination and strengthen ties between policy, planning, and programming at all levels of government.

A number of options for achieving these objectives are presented below. These will be considered in formulating the recommendations for changes to the state's programming and prioritization process.

5.1 Improving State and Local Coordination

Findings

The state's two-year programming cycle sometimes makes it difficult for the state to carry out Category C projects on a partnership basis with local jurisdictions. The long lead time required for project programming can make it difficult for the state to be responsive to emerging needs and opportunities.

Coordination between WSDOT district offices and local jurisdictions could be improved to provide for more advanced notification of planned projects, and to allow for more substantive involvement of local jurisdictions in the state planning and decision-making process for capacity improvements.

The process by which local jurisdictions may propose joint state and local projects for consideration in the state's programming process is unclear to many jurisdictions and needs to be more clearly defined.

Options

1. Increase communication between WSDOT districts and local jurisdictions regarding joint programming of projects.

2. Make the state's six-year program project-specific for all six years rather than for just the first two years, and require the designation of potential joint state and local projects in six-year programs prepared both by the state and local jurisdictions. Hold annual meetings between the districts and local jurisdictions to discuss designated projects.

3. Establish an ongoing mechanism for local jurisdictions to submit proposals for joint projects to WSDOT for consideration. Develop clear guidelines which explain to local jurisdictions these procedures and identify the steps and timeline for WSDOT consideration of joint project proposals.

4. Develop the flexibility to fund joint high priority state and local projects and the potential to require a minimum local match.

5. Develop the flexibility to adjust the WSDOT biennial program at the end of the first year to accommodate selected joint high priority state and local projects.

■ 5.2 Strengthen Ties Between Policy, Planning and Programming

Findings

The link between policy and programming needs to be strengthened to ensure that the output of the programming process adequately reflects policy objectives. The degree of complexity in program structure and the lack of consistent reporting of program benefits or achievements can make it difficult to evaluate program accomplishments, particularly at the state level, and for larger jurisdictions.

Current program decisions at the state level need to be linked with strategic medium or long-range plans for the transportation system. A stronger emphasis on planning is necessary in order to make programming decisions which take into account the increasingly complex set of transportation, economic, and environmental objectives. Developing transportation strategies which respond to growth management, economic development, and environmental objectives requires multi-jurisdictional planning efforts. Without a strong planning base, it is very difficult for any programming process to adequately address multimodal and multi-jurisdictional projects.

The assessment of cost-benefit tradeoffs at both the program and project evaluation levels is not widely done. Pavement management systems are being introduced (particularly at the county level) which have the capability to perform both systems and project level analyses, but the results of these analyses are not well integrated into the programming and budgeting processes.

At the local level, programming decisions are strongly based on the availability of outside funding, as opposed to local policy objectives. This may be viewed as either positive or negative. From the state's perspective, Federal programs such as FAUS, FAS, BR, HE and RR, and state programs such as UATA, TIA, RAP, and CAPP are effective mechanisms for ensuring that funds are spent on particular types of projects. From the local perspective, however, the structure of these programs limits flexibility and

ability, to some degree, to accomplish local priorities and objectives. It also makes programming difficult due to uncertainties in project approval.

There are conflicts between the Growth Management Act's requirement that six-year programs should include funded projects only, and those of CRAB and TIB which require inclusion of potential urban and rural arterial projects in six-year programs as a condition for funding approval.

The Growth Management Act requires establishment of regionally coordinated level-of-service standards. There is no mechanism to formally coordinate setting of these standards for state highways, which are critical links (and congestion points) in urban areas. There is also no mechanism for ensuring that improvements on state highways will be made concurrently with new development.

Options

1. Continue to expand the statewide planning function, and establish clear links between planning objectives and programming procedures.

2. Establish a uniform set of reporting requirements for WSDOT, CRAB, TIB, and local jurisdictions in order to improve measurement of program accomplishments. Such reporting should build upon requirements already in place (e.g., CRAB requirements for the CAPP program and county construction projects) and provide an aggregate picture of the types of projects being funded by the state. This would improve the ability to assess resulting benefits or progress toward established goals. This option is not intended to impose statewide policies or priorities on local jurisdictions, but simply to provide a clearer statewide understanding of how funds are being used.

3. Tie the objectives and strategies in regional transportation plans to achievement measures for local six-year program documents.

4. Establish a new standard format for six-year program documents which supports the delineation of both funded and unfunded projects. This would require an amendment to the Growth Management Act. Alternatively, revise current CRAB and TIB requirements to eliminate the conflict with the Growth Management Act.

5. Make WSDOT's route development plans consistent with regional transportation plans. Regional transportation plans need to reflect realistic estimates of the level of resources which will be available at the state level for capacity improvements.

Appendix A

County Case Study Findings

The following sections provide detailed findings on case studies conducted in six counties: King, Grays Harbor, Spokane, Benton, Yakima, and Adams. A list of county officials interviews for the case studies is provided in Table A.0.

Some of the case studies contain road budget and revenue information. It should be noted that this information has been provided for illustrative purposes only, and is based solely on sample information provided by the counties. It is not necessarily consistent with annual Federal or state funding allocations or grants, due to the ability to defer use of allocations or to borrow ahead for certain funding programs, and to variations in local budgeting practices.

A.1 King County

Context for Highway Programming

Employment, Population and Road System Characteristics

King County is the largest county in the state in terms of both total population and unincorporated area population. It is also the most densely populated county, with 690 persons per square mile. Table A.1.1 provides

Table A.0 County Officials Interviewed

King County

Councilmember Bruce Laing, King County Council
Lou Haff, King County Public Works
John Bodoia, King County Public Works
William Hoffman, King County Public Works
Paul Reitenbach, Planning and Community Development
Richard M. Callahan, Senior Planner, PSCOG
Hank Peters, District 1 Program Manger, Construction, WSDOT

Spokane County

Commissioner Pat Mummy, Spokane Board of County Commissioners
Ron Horman, County Engineer
Ross Kelly, Spokane County Public Works
Gary Kennaly, Spokane County Public Works
Wally Hubbard, County Planner
John Nunnery, Senior Planner, County Planning
Jerry Lenzi, District Administration, District 6, WSDOT

Benton County

Commissioner Robert Drake, Benton Board of County Commissioners
Dennis Skeate, County Engineer
Terry Marden, County Planner

Yakima County

Commissioner Graham Tollison, Yakima Board of County Commissioners
Daniel Hesse, Director of Public Works, County Engineer
Vern Redifee, Assistant Director of Public Works
Richard Anderwald, County Planner
Richard Larsen, District Administrator, District 5, WSDOT

Grays Harbor County

Commissioner Phil Pines, Grays Harbor Board of County Commissioners
Russ Esses, County Engineer, Public Works
Mike Daniels, Director of Public Works
Ken Camera, County Planner
Dennis Dooley, Regional Planning Commission
Sue Patnude, Executive Director, Regional Planning Commission

Adams County

Ken Maine, Public Works Director
Walter R. Olsen, Acting Adams County Engineer

Table A.1.1 King County Characteristics

General[1]			
Population - unincorporated	(1990)	513,298	
Population - total	(1990)	1,507,319	
Land Area	(1990)	2,182	sq. miles
Density	(1990)	690.8	persons/sq. mile
Employment	(1990)	858,500	
Per Capita Income	(1987)	$19,511	
Trends[1]			
Population - unincorporated	(1980-90)	+2.0%	
Population - total	(1980-90)	+18.7%	
Employment	(1980-90)	+33.6%	
Taxable Retail Sales	(1980-88)	+31.1%	
Road System[2]			
County Miles	(1990)	2,718	
Arterial		578	(21%)
Local Access		2,140	(79%)
Urban		1,432	(62%)
Rural		1,286	(38%)
State Miles	(1989)	481	
City Miles	(1989)	3,323	
# Bridges		167	

1. Washington Office of Financial Management, King County 1991 Annual Growth Report.
2. WSDOT Transportation Planning.

a summary of King County characteristics. The total county population is approximately 1.5 million. Almost 34 percent (513,298) of King County residents live in unincorporated areas. Over the past decade, King County's population has increased by about 19 percent. If there had been no annexations or incorporations, the growth in unincorporated areas would have accounted for 58 percent of the countywide growth. The incorporations of Federal Way and SeaTac in 1990 resulted in a loss of nearly 90,000 unincorporated area residents. In addition, annexations in the eighties were responsible for the loss of another 37,900 unincorporated area residents.

Most of King County's 858,500 employees work in Seattle, Bellevue, and other activity centers. Less than 15 percent of the county's employment is in unincorporated areas.

King County government is responsible for constructing and maintaining roads in the unincorporated portions of the county. Roughly one-fifth of the 2,700 miles of county roads are on the arterial system; the remaining 2,100 miles are classified as local access roads. A majority of the county's roads are in urbanized areas (62 percent).

Key Transportation Issues, Needs and Priorities

Rapid population and employment growth have created traffic problems throughout the county. The most severe congestion occurs on the state highway system and on city streets; however, a significant number of county roads and intersections are operating at or near capacity as well. Congestion on the state highway system has resulted in increases in traffic on county roads which are used as alternate routes. King County forecasts indicate that traffic problems will continue to worsen – a 22 percent increase in travel demand is projected between 1980 and 2000.

Addressing existing congestion problems and developing strategies for handling continued growth are important challenges. There has been increased public support in recent years for management of growth, achieving closer coordination of transportation and land use decisions, and pursuing efficient transportation solutions emphasizing high capacity transit (including rail, bus, vanpools, and carpools) and demand management.

The increases in state-shared gas tax revenues and new local option finance methods which were recently approved by the Legislature are providing a significant increase in funding for road construction and maintenance. The county's 1991-1996 capital budget of $279 million is $165 million higher than the 1990-1995 program. A budget increase of this magnitude is expected to allow the county to make significant progress in providing for identified needs, although much of the new revenues will be needed to

cover the increasing costs resulting from environmental laws and regulations. It will also place increased demands on the capital programming and project management processes within the county.

While the new revenues programmed in the 1991-1996 CIP represent a significant increase, this increase is not expected to be repeated in the near term, given the following: (1) declining real value of state-shared gas tax; (2) TIB has programmed 9-10 years worth of TIA revenue in the first round; and (3) additional local option taxes for general purpose needs are either not viable for unincorporated areas (as in the parking tax) or require voter approval (local gas tax).

While congestion and development issues dominate the county's transportation policy agenda, safety and preservation of the existing road network are clear priorities. The large and diverse road network generates substantial needs for pavement maintenance and rehabilitation work to preserve the substantial investment in infrastructure. A number of safety-related improvements (for example, shoulder widening projects) have been identified in needs studies, and concern for safety is particularly strong given increases in traffic levels, combined with the desire to accommodate pedestrians and bicyclists. Because road design standards have been upgraded over the past 20 years to reflect the increasingly urbanized nature of the county, there is a disparity between county roads in the older, built-out areas and those in newer growth areas. Thus, a portion of the county's road improvement needs are related to upgrading the existing street network.

Late in 1990, the King County Council defined a set of revised spending priorities for roads:

1. Safety
2. Maintenance
3. Accommodating and enhancing transit
4. Increasing capacity to support existing development
5. Increasing capacity to support future development

This policy statement reflects a shift away from a previous emphasis on providing new road capacity. This shift can be attributed in part to the recent incorporations and annexations which have reduced the urbanized portion of the unincorporated county (and the size of the tax base). It is also the result of increases in public concern for the environment and greater support for public transportation and demand management approaches to transportation problems.

Another major policy and revenue initiative in 1990 was the enactment of King County's Mitigation Payment System (MPS) of impact fees, pursuant to the state's new Growth Management Act (GMA). These impact fees are

intended to ensure that new development pays its "fair share" of the transportation system costs associated with growth.

Road Expenditures and Revenue Sources

Tables A.1.2 and A.1.3 present a breakdown of revenue sources for county road maintenance and construction. Maintenance, traffic operations, administration, and transportation planning are funded from the County Road Fund. A portion of the County Road Fund is used, together with Federal and state program funds, payments from other jurisdictions, and developer fees to fund capital improvement projects. In 1991, County Road Fund revenues are estimated at $64 million. Roughly 60 percent of this amount ($39.7 million) is from property taxes. The state-collected gas tax provides $14.5 million or nearly 25 percent of fund revenues. Other County Road Fund revenues include the new vehicle registration fee, intergovernmental transfers, and fees for service.

About 35 percent of the County Road Fund was used for maintenance in 1991. Another 31 percent of the budget went towards traffic operations, transportation planning, engineering services, and administration. The remaining 34 percent was allocated to the Capital Improvement Program or held in reserve for future projects.

The county's 1990-1995 Capital Improvement Program for road construction was $113.9 million. About $90 million (79 percent) of the program budget was from the County Road Fund. Federal programs (FAUS, FAS, and bridge) contributed $11 million (nine percent); state programs (Rural Arterial Trust Account, Urban Arterial Trust Account) provided another $2 million (two percent). The remaining ten percent of funds were derived from other governments, the county's Mitigation Payment System, and miscellaneous sources.

The county's six-year transportation improvement program budget for 1991-96 is $279 million. The County Road Fund is projected to provide 62 percent of the revenues for this program. State programs are projected to provide another 16 percent; Federal programs account for four percent of revenues. The Mitigation Payments System is expected to generate $174 million over the six-year period, which accounts for ten percent of the budget.

Description of the Programming Process

Program Structure

King County's capital improvement program includes a County Road Construction Fund. As described above, this fund is made up of revenues from the gas tax, state and Federal programs (UATA, TIA, FAUS, FAS),

Table A.1.2 King County Road Fund - 1991

Revenues	($1,000,000)	Percent
Property Tax	39.7	62
State Gas Tax	14.5	23
Vehicle Registration Fee	3.4	5
Intergovernmental	3.0	5
Charges for Service	2.4	4
Federal	0.8	1
Miscellaneous/Other	0.2	0
	64.0	**100**

Allocation	($1,000,000)	Percent
Roads & Engineering Operations		
Maintenance	22.6	
Traffic	5.0	
Planning	1.4	
Administration	10.2	
Engineering Services	1.0	
Subtotal	**40.2**	**63**
Public Works Administration	2.0	3
Capital Improvement Program	15.4	24
Reserve/Carry-Over	6.2	10
Total	**64.0**	**100**

Source: King County Department of Public Works, 1991 Budget.

Table A.1.3 King County Road Construction Capital Improvement Program – Revenue Sources

	1990-1995 (Adopted)	1991-1996 (Projected)
Beginning Balance	593,588	
FHWA/FAUS	6,428,277	6,289,041
FAS	1,098,215	905,000
FHWA Bridge	3,248,350	3,194,572
Rural Arterial Trust Account	201,012	2,720,800
Urban Arterial Trust Account	2,005,864	2,001,282
Transportation Improvement Account		40,064,810
Other Governments	3,557,822	5,479,607
Mitigation Payment System	2,062,407	29,418,641
County Road Fund	89,671,330	174,116,818
Miscellaneous/Other	5,053,000	14,842,096
Total	**113,919,865**	**279,032,667**

Source: King County 1991-1996 Capital Improvement Program.

and local taxes and fees dedicated for road improvement purposes. The majority of capital improvement monies are programmed on a project-by-project basis. Several special-purpose categorical programs have been established and receive separate allocations. These include the School Walkways Program, the Road Improvement District Program, and the Countywide Safety Program. Four other special program categories have been proposed for implementation in 1992 by the Roads Division – an Old Infrastructure Program, a 3R program, a Pedestrian Improvement Program, and an Arterial HOV Program. These programs will focus on safety, pedestrian, and transit projects. However, all of these special categories represent only about ten percent of the Capital Improvement Program funds. A new joint projects program category was established in 1991 to allocate roughly $4 million per year from the County Road Funds to allow the county to participate in interjurisdictional projects. As projects are agreed upon with other agencies, specific budget requests against the joint projects program allocation are made.

King County has defined eight major classes of capital improvement projects:

- New construction (constructing a new roadway on a new alignment)
- Major widening (adding travel lanes to an existing facility, resulting in new capacity; cost includes resurfacing, shoulder and drainage improvements)
- Minor widening (widening, reconstructing, or realigning travel lanes, but not increasing the number of lanes; may include shoulder and drainage improvements)
- Intersection (widening intersections, installing traffic signals, improving approaches, or providing turn lanes)
- Non-motorized (reconstructing and paving shoulders, constructing walkways, sidewalks or improving pedestrian, bicycle, and equestrian use)
- Study (identify corridor needs where projects have not been defined)
- Bridge (reconstructing, replacing, or constructing a new bridge)
- Transit and HOV (providing transit or ridesharing facilities, including ramp bypass, pre-emptive signals, and bus pullouts)

These categories are used to establish appropriate ranking methods for different types of projects, and also to allow for summarization of needs and capital programs by type of work. They are not used as the basis for

establishing separate sources or allocations of funds. Road surface improvements are included under the maintenance budget.

King County receives funds from several state and Federal programs, each of which has a different allocation method and set of eligibility requirements. Federal-Aid Urban Systems (FAUS) funds for the urbanized portion of the county are allocated by the King Subregional Council of the Puget Sound Council of Governments. Seattle receives a separate, formula-based allocation, while the remaining funds are distributed to the "King Consortium" consisting of King County, 22 municipalities, and Metro using a priority ranking process. (Note: a restructuring of this process is under consideration which would replace areawide prioritization with a formula-based allocation to each jurisdiction.) Federal-Aid Secondary (FAS) funds are programmed for eligible projects identified through the county's own prioritization process. Projects eligible for Federal bridge funds are identified and selection is handled through the statewide prioritization process.

King County competes for TIB program funds (UATA and TIA) for urban arterial and interjurisdictional or multimodal projects. Projects eligible for these programs are identified using the criteria which have been defined by TIB. Similarly, projects eligible for Rural Arterial Program funds are identified using CRAB criteria which have been established for the Puget Sound Region.

Program Methods and Process

Maintenance and preservation (or pavement management) needs are budgeted in the Roads Operating Budget. It is the policy of King County that all identified maintenance and preservation needs be funded before determining what amount of road fund revenue is available for contribution to the CIP.

King County initiated a quantitative project ranking method in the early 1970s, in response to the state priority programming legislation for prioritizing capital improvement needs. Since then, the prioritization method has undergone a number of revisions and refinements in project categories, criteria, and weighting methods. The most recent revision occurred in 1984, as part of the development of the King County Transportation Plan. Another revision is currently underway to reflect the county council's recent statement of spending priorities. The county received a national award for the priority process, and several other jurisdictions have adopted project ranking methods which are modelled after the King County approach.

All candidate capital projects are evaluated through the priority process. Road surface projects, which are included in the maintenance budget, are defined and ranked through an in-house pavement management system.

The priority process has three major steps:

- Needs identification and screening
- Technical evaluation and ranking
- Nonquantifiable evaluation

These steps lead to a recommended set of projects to be included in the county's six-year capital improvement program which is updated annually through the budget process. Each step is discussed briefly in the next section. An overview of the priority process is shown in Figure A.1.1.

Needs Identification and Screening: In this step, potential projects are identified from a variety of sources, including plans, studies, previous capital programs, and public input. Projects which are maintenance-oriented, infeasible or in conflict with county goals and policies are eliminated from the needs list. County planning efforts are a primary source of needs identification. Community plans in each of 13 designated community planning areas have been completed (or are in process). These plans develop zoning requirements and recommend short, medium, and long-range capital improvements. The countywide transportation plan was revised in 1987, and included a comprehensive identification of transportation needs in each community planning area. In addition, cooperative efforts with other jurisdictions and special corridor studies yield lists of recommended projects. As part of the process of updating needs for the Capital Improvement Program, public meetings are held, and the comments of cities and other affected agencies are solicited.

Technical Evaluation and Ranking: Each project identified in the needs phase is evaluated based on 20 different criteria, which have been grouped into six major categories as shown in Table A.1.4.

- Traffic criteria consider both the current volume and the extent of current peak hour congestion.
- Safety criteria take into account any operational or geometric deficiencies, historical accident rates, and the adequacy of provisions for non-motorized use.
- Physical road character criteria include lane widths, shoulder widths, and pavement surface condition.
- Road service criteria take into account the intensity of land use served by the facility, the project's contribution to system continuity, provisions for HOVs, the amount of existing non-motorized travel demand, and the project's impacts on fuel savings.

Figure A.1.1 King County Priority Process

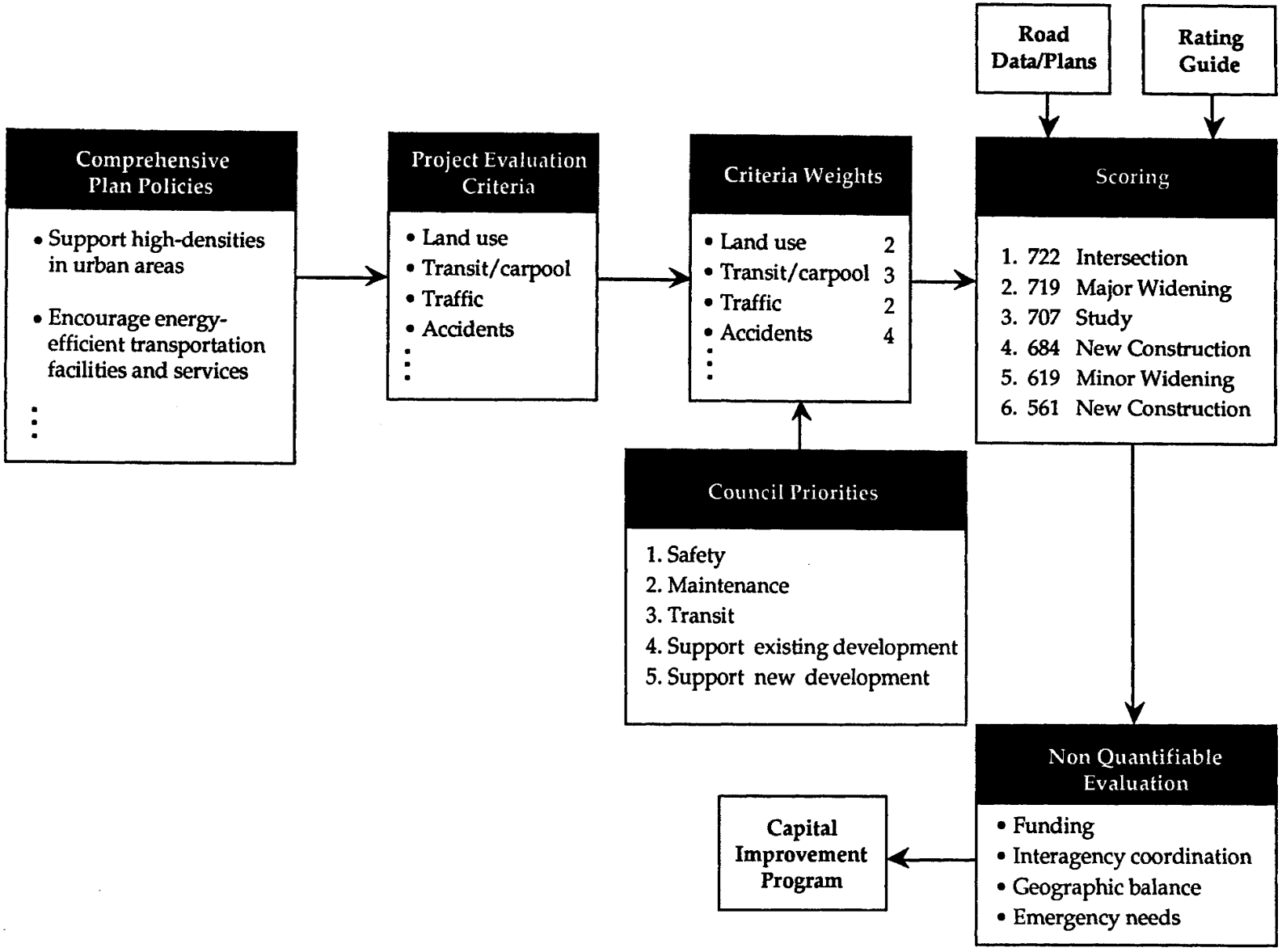


Table A.1.4 King County Priority Criteria and Weighting Factors

Criteria	Weighting Factors - 1987	Proposed Factors - 1991
Traffic		
Existing Traffic Volume	2	2
Existing Level-of-Service	3	3**
Safety		
Operational Delivery	3*	3*
Accidents	3	4
Non-Motorized Facility	1*	1*
Physical Road Character		
Lane Width	1*	1*
Shoulder Width	2*	2*
Surface Condition	2*	2*
Road Service		
Land Use	2	2
System Continuity	3	3
Transit/Carpooling	2	3
Energy	2	2
Non-Motorized Demand	2	2
Impact		
Relocation/Right-of-Way Requirements	1	1
Environment	1	3
Sensitive Areas	1	3
Growth		
Forecast Traffic Volume	1	1**
Forecast Level-of-Service	2	1**
Supports Plans and Policies	3	3
Future Land Use	1	1

* 0 for New Construction.
** 0 for Non-Motorized projects.

Source: King County Department of Public Works.

- Impact criteria consider potential relocation or right-of-way requirements, as well as any impacts on the environment or designated sensitive areas.

- Growth criteria include forecast traffic volume and level of service, the intensity of future land use to be supported, and the level of priority which the project has been assigned in adopted plans and policies.

Between zero and three points are assigned for each criterion, with the number of points depending on the characteristics of the project. For example, for the current level of service criteria, three points are assigned for level of service E or F, two points are assigned for level of service D, one for level of service C, and zero for A or B. After points for each criteria are calculated, a set of weights are applied (as shown in Table A.1.4) to reflect the relative importance of each criterion. The weighted criteria scores are summed to obtain a raw project score. The raw scores are then divided by the maximum possible number of points (which varies by type of project, since some criteria have a zero weight for some project types). The normalized score is the final project rating. This allows a comparison of different types of projects against each other.

As shown in Table A.1.4, a new set of criteria weights were proposed in 1991. Adjustments to the weights were made in response to the desire of the county council to decrease the priority of new capacity projects relative to safety, transit/HOV, and preservation projects. By increasing the weights on criteria for transit/carpool support, accidents, environmental impact, and impact on sensitive areas; and decreasing the weight assigned to forecast level of service, the average scores of new construction and major widening projects were reduced, and the average scores of intersection, shoulder, walkway, and bikeway projects were increased. Minor widening projects remained virtually unchanged.

Nonquantifiable Evaluation: This process is intended to reflect considerations which cannot be integrated into the quantitative scoring method. Availability of categorical funds (from either outside agencies or from county-defined funding programs) for particular projects is considered in this stage, as are any commitments that have been made for joint projects with other jurisdictions. Emergency needs are also evaluated and given highest priority. Public input on project proposals is taken into account to reflect the degree of support or opposition which exists. Finally, geographic distribution of funds within the county is considered, primarily to prevent major inequities. (There is no formal allocation method to ensure a particular geographic distribution of funds.) Public works staff notes that while the nonquantifiable step was added to ensure needed flexibility, in practice there are few modifications to priorities calculated in the technical ranking procedure.

The results of the priority process are documented in a Transportation Needs Report, which lists each project along with the calculated priority category and estimated costs. This document is updated annually and used as a primary input to development of the county's capital improvement program.

While all capital projects are scored using the priority process, projects which fall into one of the special categories (such as school walkways, pedestrian improvements, road improvement districts) are selected based on a separate ranking and the budget amounts which have been set aside. Projects eligible for Federal and state categorical funding are also ranked or prioritized according to methods associated with each program. The method for prioritization of FAUS projects is unique in King County, and is discussed briefly in the next section. However, King County establishes its submittal of projects based on King County priority scores.

With the exception of FAUS projects and the relatively small special funding categories noted above, King County allocates funds on a project-by-project basis according to priority rankings. There are no funding allocations to the major project type categories such as new construction, minor widening, etc.

Areawide FAUS Prioritization:[1, 2] The responsibility for allocation of FAUS funds to projects in the urban portion of King County has been delegated to the King Subregional Council (SRC) of the Puget Sound Council of Governments (PSCOG). The SRC divides the available FAUS funds into a portion for Seattle, and a portion for the remaining urban area. This area, which is referred to as the King Consortium, includes 22 municipalities, and the urbanized portion of the county. King Consortium FAUS funds are allocated on a priority basis. Metro is not a King Consortium member, but is eligible to apply for Consortium FAUS funds.

The King SRC adopted a policy which states that transportation projects should be developed with emphasis placed in the following order:

1. Correct existing safety problems; maintain structural integrity and operational capabilities;

2. Improvements necessary to implement the King Subregional Plan by insuring viability of designated activity centers;

1/ "Explanation of FAUS Funds in the King Subregion," PSCOG, September 11, 1990.

2/ Memorandum Re: King Consortium FAUS Project Prioritization Process from B'Young Ahn, P.E. to Consortium FAUS Advisory Committee, June 23, 1987.

3. Low capital solutions to better utilize existing facility and service investments;

4. Capital intensive improvements which increase capacity;

5. New facilities consistent with regional and local plans.

The prioritization method used for FAUS projects is very similar to the method used by King County – and in fact evolved from an earlier version of King County's process. The basic scheme of defining a set of criteria, assigning a score between 0-3, and then weighting and normalizing the scores is identical in the two methods. However, the SRC method uses a slightly different set of criteria, project-type categories, and weights. Criteria and weights used are shown in Table A.1.5. The criteria have been organized according to the same categories used by the King County priority process to facilitate a comparison.

Two notable criteria which are used in the SRC process which are not used in King County are "project phase" and "per capita status." The project phase criterion is intended to favor previously approved FAUS projects which are requesting funds for a new phase – the later the phase, the higher the score assigned for this criterion. The per capita status criterion is intended to enhance jurisdictional balance in fund allocation. Projects submitted by agencies which have historically been allocated lower than 90 percent of the historical per capita-based FAUS distribution are given the highest score under this criterion, while projects submitted by agencies which have received over 150 percent of the historical per-capita based distribution are assigned zero points.

Analysis

Impacts of Local Policy and Plans

King County's prioritization process has a very strong local policy and planning foundation. Needs identification is heavily based on the community planning process and other efforts which evaluate alternative solutions to transportation problems and develop consensus on appropriate solutions. Priority criteria have been defined based on the stated policies in the comprehensive plan – staff have prepared a matrix which indicates which plan policies are addressed by the various evaluation criteria. One criterion has been established to specifically give more weight to projects which have been given priority in existing county plans.

A community participation process has been defined as one of the major steps in the priority process. This process supplements the use of completed plans to ensure that current needs and priorities are considered.

Table A.1.5 FAUS King Consortium Priority Criteria and Weighting Factors

Criteria	Weight[1]
Traffic	
Existing Traffic Volume	2
Existing V/C	3
Safety	
Sight Distance	2
Grade/Vertical Clearance	2
Accidents	3
Non-Motorized Facility	2
Physical Road Character	
Lane Width	2
Shoulder Width	2
Surface Condition	3
Drainage Problem	2
Bridge Structure	2
Preservation of Investment	3
Road Service	
Service to Residential	1
Service to Recreational	1
Service to Public Facilities	1
Service to Business	1
Non-Motorized Demand	2
Transit/HOV	3
System Continuity	2
System Efficiency	3
Impact	
Relocation/Right-of-Way	1
Pollution Impacts	2
Environmental Impacts	2
Growth	
Forecast Traffic Volume	2
Forecast V/C	2
Supports King SRC Plan	3
Miscellaneous	
Project Phase	3
Per Capita Status	2

[1] Weights shown are for applicable project types. For example, system efficiency has a zero weight for road surface projects; traffic volume has a zero weight for drainage projects.

Source: King County Council of Governments.

The recent joint effort of the county council and the public works department to revise criteria weights is a notable example of how a technical process can be dynamically adapted to reflect changing priorities. The involvement of policy-makers at the technical process level is unusual, and reflects a high degree of commitment to the method. The county council is also involved in reviewing and approving the recommended capital improvement program. Notably, this review process does not typically result in major program modifications – most recently, less than five percent of 150 projects were changed.

Influence of State Policies and Programs

King County initially developed its priority process in the 1970's in response to state legislation. Since then, considerable evolution in the process has occurred, and it is currently a critical and integral part of the county's capital budgeting process. It is interesting to note that King County is the only county which routinely submits its TIP to the state in November rather than June (though this practice is not officially sanctioned). This ensures that the program which is submitted is the result of the county budget process, and provides a realistic picture of project plans that can be financed with available revenues.

State transportation categorical funding programs (UATA, TIA, RAP) are projected to pay for approximately 16 percent of the costs of road capital improvements between 1991 and 1996. Discretionary funds (from the County Road Fund and the Mitigation Payment System) are expected to account for 73 percent of the costs. Thus, the county has a considerable amount of discretion in project selection, and the eligibility requirements and prioritization methods associated with state categorical funding programs would not be expected to distort the county's priorities and project selection decisions. Each of the state programs addresses important needs which have been identified within the county.

The gas tax increases of 1990 and 1991, together with the approval of local transportation finance options are significantly increasing the county's ability to address identified capital improvement needs. New funds available through the County Arterial Preservation Program (CAPP) will be used to expand the county's overlay program and initiate a maintenance effort for Portland cement concrete pavements.

In response to the Growth Management Act, King County is pursuing a number of strategies for strengthening transportation and land use links. These include a mitigation payments system to fund growth-related road improvements, a transportation demand management ordinance affecting new development, and revisions to existing Road Adequacy Standards to strengthen concurrency of transportation improvements and new development.

Interjurisdictional Coordination

King County has actively participated in a number of interjurisdictional planning efforts, which have provided the basis for jointly funded or coordinated projects with WSDOT, county municipalities, and neighboring counties. Examples of this are the Eastside Transportation Program (ETP) and the South County Transportation Benefit District Study, both of which resulted in significant TIA funding awards for interjurisdictional projects.

The Eastside Transportation Program involved the cities of Bellevue, Bothell, Kirkland, and Issaquah; WSDOT; King County; Snohomish County and Community Transit; the Puget Sound Council of Governments (PSCOG); and local business community representatives. The ETP produced a comprehensive set of policies, programs, and projects to address explosive growth in the area, and the increasing pattern of suburb-to-suburb rather than radial trip making. Recommendations included HOV lanes, park-and-ride facilities, additional transit service, and completion of the road network.

Community planning efforts routinely involve jurisdictions in the different areas – the current Northshore Community Plan process is an example of this. King County has also worked closely with WSDOT on projects of common interest, such as HOV plans, the SR 509 extension, and the SeaTac plan.

The county's transportation plan identified joint projects, projects that are the responsibility of the state or other jurisdictions, and projects that are significant to unincorporated areas of the county. Of nearly 880 projects identified in the plan, 170 involved participation of more than one agency. Another 245 projects were identified as the responsibility of WSDOT, local jurisdictions, or private developers.

Implementation of joint projects is accomplished through interlocal agreements. These agreements define the responsibilities of each jurisdiction.

State legislation, which includes the Growth Management Act, the new local option financing methods, demand management, and high capacity transportation, all require the county and region to pursue an even more coordinated approach to planning transportation improvements. The county is currently working through an interjurisdictional steering committee of elected officials to evaluate the different local funding options. County staff have conducted workshops for local jurisdictions to encourage greater participation in transportation and land use concurrency and traffic mitigation programs. A multi-jurisdictional effort is also underway to develop coordinated transportation demand management strategies in response to SHB 1671, the state's new TDM legislation enacted this year. METRO is currently funding a part time staff position in the county to participate in high capacity transit planning efforts. Each of

these activities is strengthening the communication channels and personal relationships that are critical to effective interjurisdictional coordination.

In an effort to provide a multi-jurisdictional funding source for growth-related road projects, county staff hope to expand the new Mitigation Payments System (MPS) to include projects on city streets and state roads. The current MPS ordinance provides for this expansion by defining the location of eligible MPS projects as capacity increasing projects which are:

- On a county road in unincorporated King County; or
- On a city road in a city within King County when the city has an ordinance implementing the Growth Management Act of 1990, RCW Chapter 82.02, and when King County has an appropriate interlocal agreement with the city; or
- On a state road in King County once WSDOT has adopted procedures that will enable it to plan for and fund growth-related improvements to state roads in a manner that satisfies the requirements of the Growth Management Act of 1990, and once King County has an appropriate interlocal agreement with WSDOT.

In general, coordination on projects between WSDOT and King County has been adequate. There have been instances, however, where joint projects have been delayed due to funding problems at the state level. King County has, on occasion elected to "speed up" state highway projects by providing 100 percent funding for the design phase.

A.2 Grays Harbor

Context for Highway Programming

Employment, Population and Road System Characteristics

Table A.2.1 presents characteristics of Grays Harbor County that provide the context for an analysis of the county's highway programming process. Grays Harbor is the 13th largest county in the state, with a total population of 64,175 in 1990. The unincorporated portion of the county has a population of 24,987. Two of the county's nine jurisdictions – Aberdeen and Hoquiam – account for over 65 percent of the incorporated area population.

Forests account for approximately 80 percent of the county's land area, and Grays Harbor has the largest timber harvest in the state. Forestry-based

Table A.2.1 Grays Harbor County Characteristics

General[1]				
Population - unincorporated		(1990)	24,987	
Population - total		(1990)	64,175	
Land Area		(1989)	1,918	sq. miles
Density		(1989)	33.2	persons/sq. mile
Employment		(1988)	22,080	
Per Capita Income		(1987)	$13,484	
Trends[1]				
Population - unincorporated		(1980-90)	1%	
Population - total		(1980-90)	-2.4%	
Employment*		(1980-88)	-23.5%	
Taxable Retail Sales*		(1980-88)	-50.5%	
Road System[2,3]				
County Miles		(1990)	567	
Arterial			229	(40%)
Local Access			339	(60%)
Urban			18	(3%)
Rural			549	(97%)
State Miles		(1989)	213	
City Miles		(1989)	331	
No. of Bridges			152	
Road Budget		**(1991)**		
Total			**$12,399,262**	
Budget:	Maintenance		4,025,336	(33%)
	Construction		6,715,000	(54%)
	Admin./Other		1,658,926	(13%)
Revenues:	Road Fund Balance		3,512,297	(28%)
	Local		3,456,965	(28%)
	State (including fuel tax)		1,580,000	(13%)
	Federal		3,841,000	(31%)

1. Washington Office of Financial Management.
2. WSDOT Transportation Planning.
3. Grays Harbor County Public Works Department.

* Note: Losses in these categories can be attributed to discontinuation of construction on a major nuclear plant in Elma and therefore the statistics do not reflect overall trends in the country.

industries have historically made up a major share of the county's economic base – major employers include Weyerhaeuser Corporation, Raynier Corporation, and Simpson Timber Company. Forestry has been in a state of decline in recent years, and the present proposals to restrict logging activity in order to protect the spotted owl have been a major cause for concern. Between 1980 and 1990, the county experienced a slight (three percent) decline in population, and significant decreases in employment (23 percent) and retail sales (50 percent). There have been efforts to diversify the economic base and attract other industries, with mixed results. Recreation and tourism are important activities. The county is located directly south of the Olympic National Park, a major tourist destination in the Northwest. Attractions within Grays Harbor County include the ocean beaches and Lake Quinault.

The county is responsible for 567 miles of roads, of which only 18 miles (three percent) are classified as urban. Arterials account for 40 percent of the miles; the remainder are classified as local access roads. The county is also responsible for 150 bridges. U.S. Routes 12 and 101 serve as the primary east-west and north-south corridors in the county. State routes 105 and 109 provide access to the coast. Approximately 200 miles of state roads are located within Grays Harbor County. Another 330 miles of roads within the county are maintained by local governments. There is also a substantial network of private roads in the county – an estimated 1,000 miles, if logging roads are included.

Key Transportation Issues and Needs

Improving the structural integrity of roads and bridges has been a priority for the county for the past 20 years. This emphasis has been particularly important in light of the fact that county facilities are subject to unusually heavy loadings due to the timber-based economy. In the 1970's, a considerable amount of bridge rehabilitation and replacement work was completed. In the eighties, there was a focus on overlays and paving of gravel roads. These efforts have reduced the backlog of structural repair needs. Currently, only 17 of the 152 bridges in the county are load posted. In recent years, more attention has turned toward addressing safety problems. In addition, significant repair needs have resulted from flood damage to roadbeds and bridge channels.

Traffic congestion is not an issue at the present time; most arterials are operating at less than 30 percent of capacity. Given the lack of growth, new capacity needs have been limited. While economic development is an important county objective, provision of additional infrastructure is not viewed as an essential component of the economic development strategy. The existing highway corridors have sufficient capacity and development sites to support additional growth. One project which has been studied to enhance economic development is the completion of coastal Highway 101 north of Astoria. This project, which would provide a continuous coastal

route north of San Francisco, is viewed by some as a means of attracting greater numbers of tourists from California and Oregon.

Road Expenditures and Revenue Sources

The 1991 county road budget is $12.4 million. Approximately 33 percent of the budget is allocated to routine maintenance, 54 percent to construction, and the remaining 13 percent covers administration and interdepartmental reimbursable items. In 1990, approximately 75 percent of the road construction budget was spent on arterials (which account for 40 percent of the county's miles and an estimated 84 percent of vehicle miles traveled).

A variety of Federal, state, and local funding sources make up the county road fund. If the road fund balance is excluded, local and Federal revenues each make up roughly 40-41 percent of the budget, with state revenues (primarily the gas tax) accounting for the remaining 18 percent.

Major local funding sources for roads include a dedicated property tax of 2.25 mills, and timber harvest revenues, which are highly variable from year to year.

Most of the Federal funds received by Grays Harbor are for bridge replacement projects. The county also receives limited amounts under the Federal-Aid Secondary (FAS) and Federal-Aid Urban (FAU) programs.

The major state revenue source is the gas tax allocation. The county also receives funds under the Rural Arterial Program (RAP), and the County Arterial Preservation Program (CAPP).

Description of the Programming Process

Programming Categories

Grays Harbor County's road budget is divided into two categories: maintenance and construction. Within maintenance, a number of subcategories are defined and used in a maintenance management system to monitor and schedule work. Within construction, project candidates are identified by functional class, eligibility for Federal and state funding, and type of work. However, the total construction budget is not split by category for the purposes of budget allocation or priority setting.

Prioritization Methods – Maintenance

Funds required for routine maintenance are estimated each year based on the previous year's maintenance budget. Remaining funds are allocated to construction projects.

Maintenance work is prioritized on an informal basis by the public works staff, based on historical activities and familiarity with road conditions. A maintenance management system is used to establish budgets for each category of work, and to control the work so that it remains within budget. This system has enabled the public works department to come much closer to hitting budget targets.

About 40 percent of the county's maintenance budget is spent on pavement surface treatments and gravel road grading. Pothole repair, chip sealing, and overlays of one inch or less are classified as maintenance activities. The county has also been collecting pavement deflection information (from a road rater) for the past five years, and using these data to identify locations needing structural repairs and predict remaining pavement life. The data are also used in designing overlay thicknesses. The county has also used a pavement management system based on visual distress identification for the past three years. The county's pavement management system is not used to formally rank and select segments for treatment each year. However, the county conducts a pre-emptive maintenance program of seal coats (on a six-year cycle) and overlays (on a 10-15 year cycle).

Prioritization Methods – Construction

Capital improvement needs are identified on an ongoing basis by public works staff. Road supervisors in each of the county's three districts play a significant role in defining projects. Needs are also identified via county commissioners and direct calls from county residents. The county maintains a priority array, which is a master list of deficiencies with preliminary cost estimates.

Project scoping is performed based on engineering judgement, and design standards from AASHTO, WSDOT, and the Local Agency Guidelines Manual.

In accordance with state priority programming regulations and CRAB standards of good practice, the county maintains a six-year road program of projects, ranked by priority. Each year, the six-year road program is revised. The revision involves crossing off projects which have been completed, and adding new projects which have been identified as important by public works.

The ranking method for projects in the six-year program has not been a static one, and is not codified or documented in any formal manner. The most recent complete ranking was performed in 1989. In 1990 and 1991, new projects were manually fit into the ranking by placing them close to other projects which were similar in scope. The 1989 ranking method involved a two-step procedure which considered the type of improvement,

the traffic volume, and the accident rate. In the first step, points were assigned to each project based on the type of improvement:

Project Type	Points
Posted Bridge	25
Unposted Bridge with < ten-year remaining life	10
Culvert with < ten-year remaining life	10
Railroad Crossing	5
Slides	3
Road Widenings	2
Bituminous Surface Treatments	1.5
Overlays	1

An initial score for each project was calculated based on the product of average daily traffic (ADT) and points received.

The second step involved calculating a second score equal to the product of the accident rate and ADT. Each project was then assigned a final score consisting of the maximum of the improvement-based and accident-based scores. The projects were then ranked in order of these final scores.

Once projects are ranked, they are assigned to years based on when the work will be needed given current condition and estimated life, when state and Federal funding will be available, and when resources to perform the work will be available.

The 1992-1997 program includes 62 projects with an estimated total cost of nearly $22 million. The public works department estimates that the six-year program is underfunded by about $10 million.

Development of the annual construction program is where the most important trade-offs and prioritization decisions occur. The six-year program is used to guide the annual program, but the connection between the six- and one-year programs is by no means mechanical or straight-forward.

The selection of projects for the annual program involves first matching available Federal and state funds. Roughly 60 percent of available county funds were used in 1991 to provide a local match. Projects involving Federal and state sources accounted for 82 percent of the total road budget.

Bridge projects eligible for Federal funds are identified through the State of Washington Inventory of Bridges (SWIB) inspection and prioritization process. In the past, the county has needed to replace about two bridges every year. FAS projects are selected based on accident rates, ADT, availability of right-of-way, and public response. The county prefers to

accumulate several years of FAS allocations and borrow ahead on future years allocations in order to focus the funds on a single, large project. (One motivation for this is to minimize paperwork requirements). On occasion, a project is identified which is eligible for FAUS funding (the county receives about $100,000 every 2-3 years under this program). FEMA funds are also used periodically for emergency flood damage repairs. The county selects projects for RAP funding which would receive the highest possible scoring under the southwest region's point system. These are projects which have high deflections (indicating poor structural condition), narrow widths, poor surface conditions, and high accident rates.

Once outside funding sources are matched, other projects are selected to address structural needs (culvert replacement, pavement rehabilitation) and safety problems. Safety projects such as new guardrails and shoulder widenings have been emphasized over the past few years as a result of recent lawsuits. An accident report is prepared annually for the county commissioners, listing high accident locations as well as public inquiries and comments regarding safety problems. This report is an important source of information guiding project selection for the road program.

In 1991, the road construction program included $1.2 million in projects funded with 100 percent local monies. County funded projects are typically small – the average project size in 1991 was $40,000.

Analysis

Impacts of Local Policies and Plans

At the county level, there is no significant formal policy guidance which provides direction for highway programming and prioritization. Six-year and annual road programs are reviewed by the county commissioners and the planning director, but for the most part these reviews do not result in substantive changes to the programs. The county does not have an adopted set of strategic transportation or development objectives which the highway program could be measured against. Efforts to develop a longer range vision for the county are currently underway, with participation from the county commissioners and the regional planning commission. While Grays Harbor has not chosen to plan under the optional portions of the Growth Management Act, the designated RTPO (which is the Grays Harbor Regional Planning Commission) is beginning the process of developing a set of short and long-range plans and policies for the region, which will presumably involve Grays Harbor.

The de-facto policies reflected in prioritization of road improvements – maintain structural integrity of the system and address safety problems – are, in fact, fairly noncontroversial in the absence of pressures to increase road capacity or manage growth. Policy makers rely upon the public

works department to develop and select appropriate projects from an engineering standpoint.

Influence of State Policies and Programs

State funding (excluding the unrestricted gas tax allocation) accounts for less than ten percent of the county's road construction budget. Thus, the influence of these funding programs on project prioritization and selection is fairly limited. The competitive nature of RAP project funding causes the county to submit projects which maximize points under the RAP scoring method. However, county public works staff feel that the criteria used for RAP are very much in line with local objectives, and that projects submitted for RAP would receive high priority even in the absence of the program. However, if the county received a regular RAP allocation, without the competitive application process, projects funded would tend to have emphasized safety. CAPP funds (which do not require a local match) are used for overlays and seal coats, and are also in line with local needs. If more funds were available, the county would invest more in overlays and less in chip seals.

State requirements for development of six-year plans, and CRAB-issued standards of good practice on priority programming have had some impact on the county's prioritization process. However, the county's methods for project selection remain informal, and the assumptions in the six-year program do not constrain in any way the actual selection of projects for funding each year. Given the fairly limited size of the county's road program and the lack of competing objectives, the public works staff feels that the current informal, flexible process works satisfactorily.

Interjurisdictional Coordination

Because of the lack of growth in Grays Harbor County, and the nature of its road construction work, very few projects require significant interjurisdictional coordination. In order to promote coordination, the county sends copies of its six-year and annual road construction programs to agencies which might be affected.

One example of an unsuccessful interjurisdictional project was cited, involving an attempt at obtaining a CERB grant to provide infrastructure (water, sewer, and road) for an industrial development proposal. Grays Harbor County, WSDOT, and the city of McCleary were to jointly participate in this project, which fell apart due to McCleary's difficulties in securing private funding.

On occasion, problems are created when a city annexes a portion of county land up to, but not including a roadway. This reduces the county's tax base without reducing its infrastructure costs. Conversely, there have been instances of annexations of county roads which have just had major

rehabilitation work. However, annexation-related issues have not become serious enough to merit establishment of a boundary review board.

Coordination between the county and WSDOT on projects works fairly well, although the county would be interested in receiving notice further in advance of planned projects which might affect the county road system. Currently, the county is contacted 1-2 years in advance. Additional notice would increase potential opportunities for development of coordinated projects.

A.3 Spokane County

Context for Highway Programming

Employment, Population, and Road Network Characteristics

The following series of tables describes the employment, population, and road network characteristics of Spokane County. Table A.3.1 shows the change in county population between 1980 and 1990; Spokane County experienced 5.71 percent percent growth over this ten year period. Surprisingly, the population in the county's unincorporated area grew more than its incorporated area, 8.72 percent and 3.29 percent, respectively.

Tables A.3.2 and A.3.3 describes the average monthly employment and employment and wages ranked by industry for Spokane County. The industries with the largest number of employees are the services industry, retail trade, government, manufacturing, and wholesale trade. In terms of the amount of wages paid to employees, the industries which rank in the top five are government, services, manufacturing, retail, and wholesale trade.

Spokane County has the largest county road system in the state of Washington. Table A.3.4 details the county road inventory by functional class. The county owns 2,951 miles of road of all functional classes. Of that, 2,278 miles are rural, and 674 miles are urban roads. Gravel roads are the largest type of road (52 percent) for rural roads, and also comprises almost 11 percent of the urban roads. The majority of urban roads are classed as asphalt/concrete, followed by light bituminous.

Table A.3.5 shows the road miles, lane-miles, and vehicle miles of travel (VMT) by functional class of county road.

The county also maintains 198 bridges (or 13,000 feet of bridge), 137 railroad crossings, 48 signalized intersections, and 40,000 traffic signs.

Table A.3.1 Spokane County Population

	1980	1990	Percent Change
Unincorporated	152,164	165,442	9%
Incorporated	189,671	195,922	3%
Total	**341,835**	**361,364**	**6%**

Source: 1990 Population Trends for Washington State, Office of Financial Management, August 1990.

Table A.3.2 Spokane County Average Monthly Employment by Industry (Calendar Year 1988)

Industry	Average Number of Employees	Wages Paid ($ in 000's)
Agriculture, Forestry, Fishing	802	8,335
Mining	357	12,519
Construction	5,803	119,209
Manufacturing	18,770	442,098
Trans., Comm., & Public Util.	6,398	155,173
Wholesale Trade	10,091	223,271
Retail Trade	28,465	302,967
Fin., Ins., & Real Estate	7,791	167,525
Services	34,858	502,589
Government (Local, State, Fed.)	22,812	517,545
Other Industries	-	-
Total	**136,147**	**2,451,231**

Source: 1989 Data Book, Office of Financial Management, State of Washington.

Table A.3.3 Spokane County Employment and Wages Ranked by Industry (Calender Year 1988)

Rank	Number of Employees	% of Total	Wages Paid	% of Total
1.	Services	25.6	Government	21.1
2.	Retail Trade	20.9	Services	20.5
3.	Government	16.8	Manufacturing	18.0
4.	Manufacturing	13.8	Retail Trade	12.4
5.	Wholesale Trade	7.4	Wholesale Trade	9.1
6.	Fin., Ins., Real Estate	5.7	Fin., Ins., Real Estate	6.8
7.	Trans., Comm., Publ. Util.	4.7	Trans., Comm., Publ. Util.	6.3
8.	Construction	4.3	Construction	4.9
9.	Agric., Forestry, Fishing	0.6	Mining	0.5
10.	Mining	0.3	Agric., Forestry, Fishing	0.3

Source: 1989 Data Book, Office of Financial Management, State of Washington.

Table A.3.4 Spokane County Road Inventory By Functional Class

Rural Roads	Unim-proved	Grade & Drain	Gravel	Light Bitum	Asphalt Concrete	P.C. Concrete	Functional Class Total
07 Major Collector	0.00	1.06	6.73	175.58	191.66	.58	374.61
08 Minor Collector	0.00	0.00	107.72	151.29	57.08	.13	316.22
09 Local System*	35.54	123.63	1081.59	247.20	91.55	5.34	1586.85
Rural Totals	35.54	126.69	1196.04	674.07	340.29	6.05	2277.68
Urban Roads							
13 Principal Arterial	0.00	0.00	.13	5.74	70.29	4.77	80.93
16 Minor Arterial	0.00	0.00	.72	26.50	54.41	.94	82.57
17 Collector	0.00	.20	1.55	28.59	35.34	0.00	65.68
19 Local System*	1.83	2.74	70.26	112.74	256.59	.32	444.48
Urban Totals	1.83	2.94	72.66	173.57	416.63	12.08	673.66
Total County	**37.37**	**129.63**	**1267.70**	**747.64**	**756.92**	**12.08**	**2951.34**

* May increase by 10 mi/yr.

Source: Spokane County Engineer's Office.

Table A.3.5 Spokane County Vehicle Miles Traveled by Functional Class of Road

	Rural			Urban				
	Major Collector (07)	Minor Collector (08)	Local[1] (09, 10)	Prime Arterial (14)	Minor Arterial (16)	Collector[2] (17, 18)	Local[3] (19, 20)	Totals
Road Miles	378	280	1,621	77	78	59	438	**2,929**
Lane-Miles	758	562	3,265	210	177	127	1,167	**6,266**
VMT (100s)	3,513	1,069	2,321	6,120	1,877	587	1,317	**16,804**

(1) Rural Local = Agriculture, Commercial, Industrial, and Residential

(2) Urban Collector = Nonresidential and Residential

(3) Urban Local = Commercial/Industrial and Residential

Source: Wilbur Smith

Key Transportation Issues, Needs, and Priorities

For the county engineers, the most important transportation issue is maintenance and preservation of the existing county road system. County engineers estimate that 70-75 percent of the the county's needs are maintenance-related. A particular maintenance concern for the county is the number and condition of gravel roads. In past years, development occurred in rural areas without the concomitant development of supporting infrastructure. As these areas are now becoming filled with residential development, gravel roads are subject to increasing levels of traffic. County engineers estimate that some gravel roads bear up to 400 cars each day.

There are two primary issues for Spokane County. The first is the state's continued support for the county's ambitious Official Road Map, or the Comprehensive Plan Arterial Road Plan. The county started the Official Road Map project in the eighties, when the first comprehensive land use plan was adopted. A part of the Official Road Maps is called the "detailed neighborhood plan," and the county road plans are an important element of this. The purpose of the Official Road Map project is to provide the county with a decision hierarchy of planning, including transportation planning, for more than a six-year timeframe. County planners would like to see six-year programs tied into Official Road Maps, which have a longer timeframe, and in which transportation projects are consistent. To date, the county has completed one Official Road Map for the West Plains area.

The second issue is supporting economic development, particularly in the Spokane metropolitan area, and the effect of transportation planning on economic development. This issue has been addressed generally in the county's comprehensive land use plan, but decisions concerning transportation project funding can have an important impact on local economic development. Encouraging the recent local trend of small business expansion is also a concern of Spokane city officials.

Road Expenditures and Revenue Sources

County funding sources include the property tax, gas tax distribution, road improvement districts, state funds, Federal funds, and an accumulation of miscellaneous revenues from the the sale of maps, plat fees, permits, plan services and so forth. Spokane County received money from the CAPP, UATA, TIA, and RAP state funding programs. County engineers explored the possibility of applying for additional PWTF loan several years ago after receiving two PWTF loan approvals, but decided not to go after this money because they preferred a grant rather than a loan. The county had applied for CERB funds eight years ago, but instead received an EPA grant of $600,000 toward a $1 million project.

Table A.3.6 describes the 1990 and 1991 funding sources and amounts for Spokane County, including carryovers from 1989.

The six-year program includes projects throughout the county. Annually recurring projects, such as railroad grade crossing improvements of railroad lights and gates, pathway projects, small bridge projects, traffic control signs and signal projects, traffic safety studies and minor construction projects, were also included in the the six-year program.

The Annual Construction Element is a listing of those projects proposed for construction during 1991, based on projected receivables. It included 48 items and involved a total of $14,006,000 of construction work. The expected sources of funds were $5,230,000 of county funds, $3,129,000 of Federal-Aid funds, $3,238,000 in UAB/TIB funds, $945,000 in RAP funds, and $1,275,000 in RID assessments. The county recognized the uncertainty in counting on funds awarded on a competitive basis, and included language in the 1991-1996 Program to the effect that depending on the availability of anticipated revenue, it may be necessary for the county to add or delete projects during the 1991 construction year.

The 1992-1997 Six-Year Program is now being developed by the county, and will include the 1992 construction element. The county's budget process develops the next fiscal year's program scenario in June, a more specific budget scenario in December, and then reconciles the two in an Amended (or actual) Program in the spring. The county engineers describe this as a "dynamic, iterative process."

Description of the Programming Process

Program Structure

The county's program categories are defined in Table A.3.7. This table also describes how the funding sources are used by the county for each program type. These program categories were derived from the CAPP program. The only distinction the county makes in terms of its programming processes is between its urban and rural road system. This means that the county has a rural prioritization system that is different from that of the urban roads, which is based on the Federal road functional classification system (principal, minor, and collector arterials).

County Programming Methods and Process

Spokane County has used a programming priority array for the county urban and rural arterial systems since 1965. This programming and priority method considers service levels, service provision, and status of the physical plant. Each year the resulting priority array is submitted to the Spokane Board of County Commissioners. When UAB monies became available, the county adopted the state's prioritization method for the

Table A.3.6 1990 and 1991 Spokane County Revenues by Funding Source

Funding Source	1990 Amended	1991 Amended
Carryovers	$7,077,000	$7,753,000
Property Tax	10,200,000	10,671,000
Gas Tax	7,154,000	8,055,000
CAPP	444,000	804,000
UATA	3,220,000	2,325,000
TIA	480,000	968,000
RAP	2,088,000	294,000
FAUS	24,000	1,100,000
FAS	853,000	588,000
FBR	1,256,000	1,759,000
FASP/HES	1,163,000	701,000
DOE & EPA ("208")	384,000	455,000
WSTSC	16,000	25,000
Other	204,000	343,000
Miscellaneous	288,000	300,000
RID Bond Sales	1,275,000	2,500,000
Reimbursables	1,112,000	1,089,000
Revenue Totals	**$37,238,000**	**$40,525,000**

Source: 1991 Amended Program, Spokane County Engineer's Office.

Table A.3.7 Spokane County Summary 1991 Amended Construction Program Source of Project Funds (in millions)

Program Type	Total	P.E.	R/W	Constr.	FAUS	FAS	FBR	HES	UAB/TIB	RAP	Private	Other	County	Total
Urban	5,060	1,008	1,179	2,893	1,100	0	0	0	1,753	0	0	55	2,152	5,060
Pathway	125	10	6	109	0	0	0	0	0	0	0	0	125	125
RID	3,000	280	80	2,640	0	0	0	0	0	0	2,500	0	500	3,000
Safety	1,200	72	42	1,086	0	0	0	509	0	0	0	251	440	1,200
Bridge	2,533	112	67	2,354	0	0	1,719	0	0	0	0	0	814	2,533
Rural	2,417	150	26	2,241	0	0	0	0	0	174	0	13	2,230	2,417
1991 Amended	14,335	1,632	1,400	11,303	1,100	0	1,719	509	1,753	174	2,500	319	6,261	14,335

Source: Spokane County Engineer's Office

county's urban roads, with the object of using it as a "funding" prioritization method, even though county officials feel that local agencies' unique needs are not included in the state's process.

Table A.3.8 shows how the county defines its total needs and its annual needs. For example, for its urban system the county determined that it had a number of miles of urban roads with reconstruction needs. Based on an average $1 million/mile of reconstruction cost, the county's total urban arterial needs are estimated to be $23,190,000. Since there was no practical way for the county to address this level of need, the Spokane Board of County Commissioners directed that these needs be structured into the six-year program. This resulted in an annual needs estimation of five miles, or $3,865,000 per year for urban arterials. The county's total needs are $172,318,000, with a total annual needs estimate of $18,463,000. The county also compares its construction budget versus its needs estimate, as shown in Table A.3.9. This table shows that the 1991 annual shortfall was $4,361,000, primarily in the categories of urban arterials, new pavement, and urban access.

Spokane County's programming and prioritization process is described in its 1991 Arterial Priority Study. In this document, the arterials are separated by urban or rural designation, and under each of these categories by principal arterial, minor arterial, and collector arterial, and by major collector arterials, and minor collector arterials for rural roads.

The county's urban arterial rating method takes the road into consideration in two ways: the condition of the road and the service it provides. Condition is rated by looking at the existing road conditions – pavement width, overall roadway width, and pavement condition – as compared to standard. Service is rated by considering traffic volumes and capacity (V/C ratio), operating speed, accident history, and its relationship to an equivalent accident ratio for comparison of one section of roadway to another. Factors that fall below a minimum standard will be highlighted as deficient, and arranged in priority order for funding consideration.

Ratings of urban arterials can be compared with each other, but not with rural arterials because a different prioritization method is used. The urban rating used is the same as that of the UAB to determine UATA funding. The rural rating method also takes into consideration the road in the same ways: the condition of the road and the service it provides. Condition is rated by looking at the existing road conditions – width, shoulders, alignment, grade, and so forth – as compared to standard. Service is rated primarily by the traffic using the road, including the number of trucks and adjoining land uses. The two ratings of condition and service are then combined to give a priority rating. The rural rating system used is the same as that used by the Northeast Region RAP to determine funding for RATA funding.

Table A.3.8 Spokane County Estimated Total and Annual Needs

Identified Immediate Construction Needs						
• Urban Arterials	-	30 miles need reconstruction	$23,190,000	6 yr. program	=	$3,865,000/yr.
• Rural Arterials	-	27 miles need reconstruction	$18,000,000	6 yr. program	=	3,000,000/yr.
• Pave Gravel Roads	-	400 rural miles need paving (R.I.D. program)	$14,000,000	10 yr. program	=	1,400,000/yr.
• Reballast	-	To sustain heavy truck loading	$26,000,000	20 yr. program	=	1,300,000/yr.
• Resurface	-	60 miles asphalt overlay, 96 miles retread and 36 miles urban access overlay	$12,168,000	6 yr. program	=	2,028,000/yr.
• Railroad Crossings	-	Only 35 (26%) of 137 crossings have signals	$25,200,000	20 yr. program	=	1,260,000/yr.
• Bridges	-	38 (19%) of 198 bridges are deficient (17 with load limits)	$14,000,000	10 yr. program	=	1,400,000/yr.
• Urban Access	-	120 urban miles need paving (R.I.D. program)	$36,000,000	6 yr. program	=	610,000/yr.
• Other Needs	-	Pathways, signs and signals	$3,660,000	6 yr. program	=	610,000/yr.
		Total Needs:	**$172,218,000**	**Annual Needs:**		**$18,463,000/yr.**

Source: Spokane County Engineer's Office

Table A.3.9 Spokane County 1991 Annual Budget vs. Estimated Needs Comparison

Urban Arterials	Budget	Needs	Difference
Urban Arterials	$2,540,000	$3,865,000	$(1,325,000)
Rural Arterials	2,800,000	3,000,000	(200,000)
New Pavement	500,000	1,400,000	(900,000)
Reballast	810,000	1,300,000	(490,000)
Resurface	2,046,000	2,028,000	18,000
Railroad Crossing & Safety	1,583,000	1,260,000	323,000
Bridges	2,418,000	1,400,000	1,018,000
Urban Access	1,000,000	3,600,000	(2,600,000)
Pathways	200,000	360,000	(160,000)
Signs & Signals, Other Urban	205,000	250,000	(45,000)
Total 1991 Construction Budget:	**$14,102,000**		
Total Annual Needs:		**$18,463,000**	
Difference			**$4,361,000**

Source: Spokane County Engineer's Office.

Although a high priority rating for a particular road indicates greater need for improvement, other considerations are also applied to the priority ranking. These considerations include eligibility for matching funds and availability of those funds, a reasonable split between urban and rural jobs and geographic distribution throughout the county, the scheduling possibility of getting a project to contract, unexpected winter damage, or a sudden increase in accidents. The most important consideration for the county is which projects stand the best chance of being funded. Thus, projects will frequently get ranked high in the six-year plan according to this criterion, even if these ranking not fully coincide with county needs and priorities. On the whole, however, county engineers reported that the state funding agencies priority formulas worked fairly well in ranking the county's needs.

Table A.3.10 lists the county construction projects funded by the county or by state or Federal funding agencies. Table A.3.11 shows how the state funded projects were defined in the county's 1991 Arterial Priority Study.

The county uses the state auditor's Budgeting, Accounting, and Reporting System (BARS) to define construction and routine maintenance. In addition, the county also uses the standards of good practice developed by the County Road Administration Board, and the Local Agency Guidelines Manual prepared by the Local Government Program Office of WSDOT.

The county's current pavement management system (PMS) was described as informal. The county currently uses a non-destructive tester for county paved roads to determined the location of overlays. This decision, in addition to testing, also factors in volumes and road widths. It was estimated that overlay needs are about $20 million per year, and the county is looking to CAPP funds to help address this issue. Traditionally, the county has operated on a worst-first basis with regard to overlays, but when the new CRAB PMS becomes available, a best-first priority system is expected to be substituted.

Participants in the county programming process are the county engineer's office, the county planning office, and the board of county commissioners. The primary responsibility for developing the six-year plan rests with the county engineer. The county engineer gives a copy of the proposed six-year plan to the county planning office to review before submitting it to the board of county commissioners. A copy of the six-year plan also gets sent to the district WSDOT office, to the Spokane Regional Council (SRC), and to CRAB for their review.

The board of county commissioners relies heavily on the expertise and experience of the county engineers, and often accepts the six-year plan as submitted. The board will occasionally revise the priority order of projects because of particular constituency concerns, but this is not done frequently. On particularly large projects, the county engineers keep in touch with

Table A.3.10 Spokane County 1991 Major Construction Project Funding Summary

	Project	Tasks	Funding Source	Amount
1.	University Avenue: 16th Ave. - D. Mica Rd.	Finish Construction	UAB	$662,000
2.	McDonald Road: Sprague - Mission	PE, RW & Begin Construction	UAB	$985,000
3.	University Avenue: 3rd Ave. - 16th Ave.	PE & RW	UAB	$1,286,000
4.	Argonne Road - BNRR @ SR 290 (Trent Avenue)	Final Design	TIB	$400,000
5.	Montgomery Avenue: Argonne Rd. - .13 Mile East	PE, RW & Begin Construction	TIB	$450,000
6.	South Valley Arterial: I 90 - SR 27	EIS, PE, & RW	TIB	$500,000
7.	Fancher Road: Sprague - Broadway	Begin PE & RW	TIB	$160,000
8.	Mill Road: Hastings - Dartford	PE, RW & Begin Const.	FAUS	$1,380,000
9.	Belle Terre Avenue: SR 27 - Best Lane	Overlay		$158,000
10.	Forker Road: Wellesley Avenue - Bigelow Gulch	New Alignment Study		$30,000
11.	Bigelow Gulch Road: Havana - Argonne	New Alignment Study		$30,000
12.	University Bypass: Montgomery - Argonne	New Alignment Study		$10,000
13.	Valley East-West Arterial: SR 27-Greenacres IC	New Alignment Study		$50,000
14.	1991 School District Pathway Projects	Elementary School Pathways		$125,000
15.	1991 Railroad Grade Crossing Signals & Gates			$833,000
16.	1991 Traffic Signal System Construction			$467,000
17.	1991 Traffic Safety Spot Improvements			$270,000
18.	Bruce Road: Peone - Day Mt. Spokane	Finish Construction	RAP	$130,000
19.	Brooks Road: Med. Lake CL - Thorpe	Construction	FAS	$715,000
20.	Seven Mile Br. #2601 @ Spokane River	Phase 1 Construction	FBR	$1,750,000
21.	Bridge Replacement Projects		FBR	$883,000
22.	Urban and Rural RID Projects	Assessment Districts		$3,000,000
23.	Rural Gravel Projects			$565,000
24.	Day Labor - Minor Urban and Minor Rural Projects			$813,000

Source: 1991 Amended Program, Spokane County Engineer's Office.

Table A.3.11 Spokane County Summary Priority Listing of 1991 State Funded Projects

Functional Class: Principal Arterial

Priority	Arterial Description Rte. & Section No.	Def. Group	AADT	Length	Oper. Speed (Dev.)	V/c. Ratio (Dev.)	Equiv. Accid. (Dev.)	Pavt. Cond. (Dev.)	Pavt. Width (Dev.)	Rdway. Width (Dev.)	Funding Agency	Amount
2	University Road 16th Ave. to Dishman Mica 5012 001	1	13,800	1.23	10 -15 DEF	1.20 0.30	18 -142	0 -5 DEF	20 0	34 -2 DEF	UAB	$662,000
3	University Road 4th Avenue to 16th Avenue 5012 002	1	13,800	0.77	15 -10 DEF	1.20 0.30	57 -103	0 -5 DEF	20 0	30 -6 DEF	UAB	$1,286,000
27	South Valley Arterial I-90 SR27 (Pines Road)										TIB	$500,000
33	Fancher Road Broadway Ave. to Sprague Ave.	2	8,000	0.50	9 -16 DEF	1.13 0.23	29 -131	1 -5 DEF	24 0	34 -2 DEF	TIB	$160,000

Total Projects Ranked in Functional Class: 89

Functional Class: Minor Arterials

Priority	Arterial Description Rte. & Section No.	Def. Group	AADT	Length	Oper. Speed (Dev.)	V/c. Ratio (Dev.)	Equiv. Accid. (Dev.)	Pavt. Cond. (Dev.)	Pavt. Width (Dev.)	Rdway. Width (Dev.)	Funding Agency	Amount
2	McDonald Road Mission Ave. to Sprague Ave. 2907 003	1	7,200	1.01	19 -1 DEF	1.06 0.16	36 -34	0 -5 DEF	20 0	28 -6 DEF	UAB	$985,999
3	Montgomery Avenue Locust St. to Argonne Road 3071 001	1	14,600	0.26	9 -11 DEF	1.13 0.23	103 33 DEF	2 70	44 0	44 4	TIB	$450,000

Total Projects Ranked in Functional Class: 92

Table A.3.11 Spokane County Summary Priority Listing of 1991 State Funded Projects (continued)

Functional Class: Rural Arterial

Rank	Road No.	Road Name	From	To	MP	to MP	Length	Mnt. Dst.	Road Class	AADT	Priority Rating	Funding Agency	Amount
80	481	Bruce Road	SR206	DayMt, Spokane	2.26	3.29	1.03	1	8	710	55.39	RAP	$130,000

Total Projects Ranked in Functional Class: 21

Functional Class: Railroad Grade Crossing

Rank	P-D Index Exp. Acc.	Xing. No.	WVTC Xing No. RR-SD-Miles	Road No.	County Rd. Crossed	RR Co.	Urban Rural	Prot. Type	AADT	TPD	Funding Agency	Amount
1	10.688389	54074	01A000065.0	0090	Argonne Rd. (two way)	BNR	Urban	Gates	30202	44	TIB	$400,000

Total Projects Ranked in Functional Class: 136

Source: Arterial Priority Study, Spokane County Engineer's Office

commissioners about the project, making sure that they have the current cost projections, expenditure information, and scheduling changes.

Analysis

Impacts of Local Policy and Plans

The development of a six-year plan and its consistency with the county's comprehensive land use plan is handled well on an informal basis. The county engineers know what the comprehensive land use plan requires in terms of its standards, and the transportation and planning process was described as an "ongoing" process where staff are continually discussing project issues. From the standpoint of the board of county commissioners, before a country road project (CRP) number is issued for a project, the county planning office and the county engineer's office have already reviewed and agreed on the project. Although there is no formal exchange between the county planner and county engineer, they attend all meetings and receive copies of all pertinent documents.

The county engineers use the UAB process as an example of this process, which was described as a "math process first." The county inventories the road and uses the UAB formula to develop the priority list based on the most traffic, roughest streets, worst pavement condition, most potholes, and so forth. The road segments are pre-defined. At that point, the priority list is compared with the long-range land use plan to determine consistency. In some instances, projects that were first on the priority list are deleted or demoted after reviewing the long-range plan. This review is sufficient because the transportation element of the comprehensive land use plan is very general.

In the unlikely event that the county planners didn't approve of a specific project on the priority list, but the county engineers believed that it was consistent with the long-range plan, the project would get submitted to the board of county commissioners for approval. The board of county commissioners have to agree to a statement in the project prospectus that they certify the project's consistency with the comprehensive land use plan, of which the transportation element is a part. Although the planning and engineering departments do not now formally exchange this agreement, it is done at the board level. There has been some discussion about submitting the six-year plan to the planning commission, and having this commission conduct a formal review and approval process. The six-year plan would then go to the board of county commissioners with a formal communication from the planning commission that the six-year plan was consistent with the land use plan. To date, the county has not chosen to formalize the consistency review process in this way because it works fairly well informally.

The county planning office would like to see closer coordination between the planners and engineers on the capital improvement process, although they also feel that they are fairly well coordinated informally. In the future, the county planning office anticipates that the six-year plan will be based on the county's Official Road Maps and arterial road maps more closely, and that this will require a broader and more formal relationship between engineering and planning.

Influence of State Policies and Programs

With the exception of local access roads, current state funding programs do fairly well in addressing local needs. Because the prioritization system only addresses arterials, local access roads are not considered. Local access gravel roads are considered a particular problem by local officials. Road improvement districts give residents along gravel roads an opportunity to pay for their own improvements. This is very expensive to property owners, and many of the remaining gravel roads are now primarily located in low-income urban areas, where residents have difficulty with this expense.

A key issue raised in the interviews is the uncertainty about what projects will be funded. The county has significant needs, of which only a few get state funding in any given year. The others will remain unaddressed until the county submits them the following year. Because projects are evaluated against other projects submitted in the same year, the project ranking changes with every submission, even though their importance to the county, in terms of the county's priority level, doesn't change. To the county, this means that programming with any certainty in other than the current year is problematic. County needs, however, are so extensive that all projects addressed with this funding are on the county priority list. Also, because there is no certainty in the funding process, county officials find that multi-year project programming is very difficult to do with accuracy.

In general, the six-year plan is thought to be a useful way to develop the county's capital improvement program. The prioritization methods developed by the state funding agencies reflect, to a great degree, the needs that the county also considered priority needs. If the six-year plan requirement didn't exist, but the county received an annual minimum funding floor, the major difference in the county process would be that the county would address its needs projects more in the priority order developed through the prioritization process.

County officials commented that remarks about the state funding process should be understood in light of the fact that officials also think that they have had much better success with the flexibility of state programs than Federal programs, and that the state, in fact, has been very good to work with on these issues. This is particularly true where local officials can

participate in the development of the priority rating formulas. The RAP program was cited as particularly suitable for the requirements of counties, because local officials had the opportunity to work with the program to make it flexible and responsive to county needs.

Interjurisdictional Coordination

The six-year plan approved by the board of county commissioners is submitted to the local MPO, in this case, the Spokane Regional Council (SRC) for inclusion in the TIP. Although the SRC does not review projects for regional consistency that are not targeted for Federal funding, the six-year plan does get incorporated into the regional transportation improvement program.

The county has always had a fairly strong regional transportation study process on the informal level. This is due to the fact that there are only three jurisdictions involved in the process – the county, the city of Spokane, and WSDOT. From a staff level, it has been fairly easy to coordinate projects, or work out disagreements about particular issues. This relationship has improved in recent years with the increased participation of the district WSDOT office, although the planning office would like to see WSDOT participation better defined. The WSDOT district administrator does a good job in this district with coordinating transportation and land use, and plans are reviewed by each office as they are developed.

The SRC is considered a coordinating body, and a good mechanism for information exchange for such activities as feasibility studies. Although there is some discussion that the SRC should be the lead regional agency, it does not currently have the authority to review or prioritize local plans and projects on a regional basis. County planners and engineers now coordinate the arterial plan with Spokane city officials, and then submit it to the SRC, where it gets incorporated into the TIP.

■ A.4 Benton County

Context for Highway Programming

Employment, Population, and Road Network Characteristics

Benton County is located in south-central Washington in the middle of the Columbia Basin. The Columbia River forms the county's northern, eastern,

and southern boundaries. To the west, Benton is bordered by Yakima and Klickitat Counties.

Prior to World War II, Benton's economic base was predominantly agriculture. Population was small and the county was primarily rural. In 1943, the northeastern one-quarter of Benton County was taken over by the U.S. Army Corps of Engineers as a site for a plutonium production plant. The plutonium produced at the site was an essential part of the "Manhattan Project" which resulted in the development of the world's first nuclear weapons. Up until the early eighties, the Hanford nuclear industries grew into a strong and diverse employment and industrial base. This growth resulted in the Tri-Cities (Richland and Kennewick in Benton County, and Pasco in Franklin County) becoming a major metropolitan area serving the Columbia Basin region, which includes parts of Washington, Oregon, and Idaho.

During the decade 1970-80, Benton County had the fourth highest population growth rate of all counties in the state, and the largest growth rate of any of the counties of comparable population. The mid-eighties, however, saw a significant shift in this growth rate, following the completion of construction at Hanford, and a de-escalation in activity at the nuclear industry site. Table A.4.1, Benton County Population, shows that there was a decline in county population levels in the unincorporated areas of the county.

Table A.4.2 shows average monthly employment in Benton County. The manufacturing sector employs the largest number of people at the highest wage, followed by the service sector. Government employment is the fourth highest in terms of the number of people employed, and the third highest in terms of wages paid. This is due to the location of the Hanford Nuclear Energy Facility near Richland, which, during the seventies and early eighties was responsible for employing thousands of people near the site.

The next table (A.4.3) describes the county road system by functional class, as of 1990. The largest class of road in Benton is rural local (09), with 441 miles, followed by urban local (19) at 114 miles. There has been an average 4.75 increase in miles since 1989, primarily in the rural local category, but also some road reduction in the minor collector (08), minor arterial (16), and urban local road categories. The total for all classes of road in 1990 was 887.

In terms of pavement type, most of Benton's roads are bituminous surface treatment (503 miles), followed by gravel (324 miles), and asphalt concrete pavement (44 miles).

Table A.4.4 shows the VMT by functional class of county road as of 1987.

Table A.4.1 Benton County Population

	1980	1990	Percent Change
Unincorporated	32,395	27,842	-14%
Incorporated	77,049	84,718	10%
Total	**109,444**	**112,560**	3%

Source: Office of Financial Management, Forecasting Division, June 28, 1991.

Table A.4.2 Benton County Employment and Wages Ranked by Industry (Calender Year 1988)

Rank	Number of Employees	% of Total	Wages Paid	% of Total
1.	Manufacturing	26.5	Manufacturing	39.1
2.	Services	23.1	Services	22.0
3.	Retail Trade	16.4	Government	18.3
4.	Government	15.9	Retail Trade	7.0
5.	Agric., Forestry, Fishing	6.9	Construction	5.9
6.	Construction	4.8	Agric., Forestry, Fishing	2.6
7.	Fin., Ins., Real Estate	2.9	Fin., Ins., Real Estate	1.8
8.	Trans., Comm., Publ. Util.	1.7	Trans., Comm., Publ. Util.	1.7
9.	Wholesale Trade	1.7	Wholesale Trade	1.5
10.	Mining	0	Mining	0

Source: 1989 Data Book, Office of Financial Management, State of Washington.

Table A.4.3 Benton County Road Inventory by Functional Class

Functional Class		Miles 01/01/89	04/17/89	Net Change
Rural	07	111.71	116.44	4.73
	08	191.98	189.91	-2.07
	09	431.81	440.73	8.92
Urban	13			0
	14	785	7.85	0
	15	214	2.14	0
	16	747	4.56	-2.91
	17	11.22	10.96	-.26
	19	118.0	114.34	-3.66
Total All Classes		**882.18**	**886.93**	**4.75**

Pavement Type

Functional Class		Miles 01/01/89	04/17/89	Net Change
Unimproved	(B)	13.69	13.76	10
Grade/Drain	(C)	1.19	1.19	0
Gravel	(E)	330.94	324.19	-6.75
BST	(F)	497.04	503.30	6.26
ACP	(I)	36.53	44.27	7.74
PCC	(J)	279	19	-2.60
Total All Types		**882.18**	**886.93**	**4.75**

Source: Benton County Engineer's Office.

Table A.4.4 Benton County VMT by Functional Class of Road (1987)

	Rural			Urban				
	Major Collector (07)	Minor Collector (08)	Local[1] (09, 10)	Principal Arterial (14)	Minor Arterial (16)	Collector[2] (17, 18)	Local[3] (19, 20)	Totals
Road Miles	113	190	432	10	7	11	121	884
Lane-Miles	230	381	864	20	14	23	245	1,777
VMT (100s)	681	492	317	354	126	184	476	2,630

(1) Rural Local = Agriculture, Commercial, Industrial, and Residential

(2) Urban Collector = Nonresidential and Residential

(3) Urban Local = Commercial/Industrial and Residential

Source: Wilbur Smith.

Key Transportation Issues, Needs, and Priorities

There are several important issues in Benton County. Economic development may be the most critical. During the seventies and early eighties, Hanford's employment was very high, and the Federal government projected major growth and increased employment levels at the facility during the mid to late eighties and nineties. Unfortunately, the opposite occurred. Not only did the county not realize Hanford's projected growth, it saw a significant reduction in activity and employment levels. The county is now beginning to pull out of the depression which resulted from this, and there is a slow increase in residential and commercial permit issuances.

For the county engineers, the most important issue is funding continuity. In the opening preamble of the county's 1990-1995 six-year plan, the county engineer wrote " Funding of needed construction projects continues to be our number one unknown...." Although the county's six-year plan develops the county's priority list, the county doesn't know beyond the upcoming year what will or won't get funded, which makes project planning very difficult.

The key transportation issue for the county planner is support for rural mobility, specifically, the farm-to-market system. With I-82 in good shape, planners feel that urban transportation is fairly solid. However, local roads are another issue. Benton's slowly increasing population is putting increasing strains on the local system. The county's wine industry is growing, and Pasco is a major junction for railroad switching, as well as an important local river port. In addition, TRIDEC (Tri-Cities Industrial and Development Council) is trying to diversify the local economy away from Hanford, and new electronics firms are moving into the area.

Road Expenditures and Revenue Sources

For the 1990 program year, the county projected in 1989 that it would receive $2,982,328 from the state in gas tax, UAB, RAP, and Path and Trails funds. Table A.4.5 shows that the county's total estimated revenue was projected to be $9,521,570, and of that, 31 percent would come from state funds. The county's portion of county revenue would constitute 39 percent of the estimated revenues, and the Federal portion would constitute 29 percent of the estimated revenues. The following is a summary of state and Federal funds by source anticipated by the county:

Table A.4.5 Benton County 1990 One Year Road Program Estimated Revenues (July 1989)

B.A.R.S. No.		County	State	Federal	Total
311.10	Road Levy (County) 1990	2,100,000	0	0	2,100,000*
318.20	1. Leasehold	0	20,000	0	20,000
332.15	2. Taylor Grazing	0	500	0	500
332.96	3. Wildlife Refuge	0	0	2,500	2,500
335.00.91	4. P.U.D. Excise Tax	0	0	0	0
335.02.31	5. Timber Tax	0	0	0	0
335.00.82	6. Fines (Overloads)	0	500	0	500
336.00.89	7. Gas Tax Apportionment	0	1,785,600		1,785,600**
341.50	8. Sale of Maps	500	0	0	500
341.60	9. Sale of Prints	10,000	0	0	10,000
344.10	10. Various Road Repairs	5,000	0	0	5,000
344.90	11. Plat Road/Access Road/Encr. Review***	10,000	0	0	10,000
361.11	12. Interest	0	0	0	0
369.10	13. Special Sales by County Road	1,000	0	0	1,000
Subtotal		**2,126,500**	**1,806,600**	**0**	**3,935,600**
272.00	Beg. Fund Balance (1 January 1988) (Working Capital)	1,257,329	0	0	1,257.329
Grant Funds (Projects only if Funds Become Available)					
334.03.8	U.A.B. Funds (Urban Arterials)	0	596,800	0	596,800
322.20.20	Federal: BRM = 130,000 RFP = 1,235,000	0		01,365,000	1,365,000
332.20.20	FAS/FAUS/HES	0		01,397,213	1,397,213
334.03.70	R.A.P.	0	570,000	0	570,000
Subtotal (Grant Funds)		**0**	**1,166,800**	**2,762,213**	**3,929,013**
Reimbursable Funds					
338.41	Road Construction & Engineering Services	150,000	0	0	150,000
338.42	Road Maintenance Services	10,000	0	0	10,000
349.16	Personnel Adm./Services by Co. Rd.	140,000	0	0	140,000
397.00	Operating Transfers - IN				
397.00.0103	Flood Control Fund	8,100	0	800	8,900
397.00.0114	Paths & Trails	81,800	0	0	90,728
Subtotal (Reimbursable Funds)		**389,900**	**8,928**	**800**	**399,628**
Grand Total – Revenue		**3,773,729**	**2,982,328**	**2,765,513**	**9,521,570**

Source: Benton County Engineer's Office, 1990 Annual Road Program.

* Benton estimated in July. WSDOT Revenue and Expenditure Report reflects $2,063,000 for road levy tax revenue, estimated in December.

** WSDOT Revenue and Expenditure Report reflects $1,840,000 for gas tax apportionment.

*** Encroachment.

Anticipated 1990 State Funds

1.	Leasehold	$ 20,000
2.	Taylor Grazing	500
3.	Fines (Overloads)	500
4.	Gas tax apportionment	1,785,600
5.	UAB	596,800
6.	RAP	570,000
7.	Paths and Trails	8,928
	Total	**$2,982,328**

Anticipated 1990 Federal Funds

1.	Wildlife Refuge	$ 2,500
2.	BRM	130,000
3.	RRP	1,235,000
4.	FAS/FAUS/HES	1,397,213
5.	Flood Control	800
	Total	**$2,765,513**

County funds are composed primarily of road levy monies ($2,100,000), monies from the sale of maps, prints, and road repairs ($15,500), and plat and access road reviews ($10,000). In addition, the county anticipated being reimbursed from other jurisdictions for road construction and engineering services, maintenance, and other activities with the amount of $389,900. The total county portion of its anticipated 1990 revenue was $3,773,729.

Estimated 1990 county expenditures were broken down into three main categories: maintenance, administration, and construction. Table A.4.6 details the expenditures by category and funding source.

Description of the Programming Process

Program Structure

The county's programming processes are not separate for state, Federal, or local funding sources, nor does the county use program categories analogous to the state's categories A,B,C, and H. The county uses

Table A.4.6 Benton County 1990 Estimated Expenditures (July 1989)

		County	State	Federal	Total
Maintenance		2,894,000	0	0	0
Administration		580,000	0	0	580,000
Subtotal		**3,474,000**	**0**	**0**	**3,474,000**
Construction:					
	100% County Funded Projects				
	Bridge Replacements:				
–	McBee Road Bridge	45,000	0	0	45,000
–	Highland Extension Road Bridge	45,000	0	0	45,000
	Bridge Rehabilitation:				
–	Old SR 12-Bridge Deck	95,000	0	0	95,000
–	Kiona Bridge-Bridge Railings				
–	Railroad Crossings	5,000	0	0	5,000
–	Plat Road Review and Engineering	15,000	0	0	15,000
–	Paths and Trails	25,000	0	0	25,000
–	Emergent Projects (Area 1 - West)	75,000	0	0	75,000
–	Emergent Projects (Area 1 - East)	75,000			75,000
	Gravel Roads (Special Emphasis Program)				0
–	Dallas Road (I-82 I/C to Badger)	454,000	0	0	454,000
	Grant Funds (Projects Only if Funds Become Available)				
	Federal/State Matching Projects:				
FAS	O.I.E.H. Rd. (Rayhill-Corral Creek)	102,000	0	508,000	610,000
BRM	South Span, Twin Bridges (Prelim. Engr.)	32,000	0	130,000	162,000
FAUS	Approaches, Twin Bridges	46,000	0	229,000	275,000
FAUS	Dallas Road (End of oil N to I-82 I/C)	246,000	0	0382,000	628,000
RAP	Travis Road (Sellards to Reese)	110,000	285,000	0	0395,000
RAP	McKinley Springs (Farnum to Young)	215,000	285,000	0	500,000
RRP	Gap Road RR Xing (WCVRR)	3,000	0	247,000	250,000
RRP	Chemical Drive RR Xing (BNRR)	3,000	0	247,000	250,000
RRP	Cochran Road RR Xing (WCVRR)	3,000	0	247,000	250,000
RRP	O.I.E.H. RR Xing (WCVRR)	3,000	0	247,000	250,000
RRP	Perkins Road RR Xing (BNRR)	3,000	0	247,000	250,000
HES	Chemical Drive (Vicinity of Yew Street)	14,357	0	129,213	143,570
HES	Griffin Road (Vicinity of Johnson)	16,000	0	149,000	165,000
UAB	27th Street, (Washington to Oak)	149,200	596,800	0	746,000
	Construction Subtotal	**1,864,557**	**1,166,800**	**2,762,213**	**5,793,570**
Reimbursable: (519.00)					
	519.74 - City	50,000	0	0	50,000
	519.75 - Other Governmental	105,000	0	0	105,000
	519.76 - Other Funds	90,000	0	0	90,000
	519.77 - Non-Governmental	9,000	0	0	9,000
	521.70 - Traffic Policing:				

Table A.4.6 Benton County 1990 Estimated Expenditures (July 1989) (continued)

	County	State	Federal	Total
Diversions				
Div. for Traffic Law Enforcement	See Note	0	0	0
Total Expenditures	**5,592,557**	**1,166,800**	**2,762,213**	**9,521,570**

Note: Diversions

Div. for Traffic Law Enforcement (Funds Taken Off the Top)	45,000	0	0	45,000

Source: Benton County Engineer's Office.

primarily maintenance and construction, and uses the state auditor's Budgeting, Accounting, and Reporting System (BARS) to define these categories. Maintenance of the existing system is the primary focus of the county; resurfacing is the most common road project.

The county's six-year plan includes an inventory of county roads using the state's priority formulas to derive the priority order. In addition, the county has developed a priority listing of gravel roads by irrigated and by dryland areas.

The county engineer begins to develop the six-year plan in April, and it gets sent to the board of county commissioners in June, and submitted to the state in July.

Programming Methods and Processes

Improvement needs are identified primarily by windshield surveys of the county roads, and through the expertise and experience of the county engineers. The county is also building a database for a pavement management system, and it completed its fourth rating for this system in 1990. In 1989 Benton County, along with several other counties, cities, and the Hanford Project, split the cost of a pavement rater. The Benton-Franklin Governmental Conference coordinates the use of the pavement rater among jurisdictions. Improvement needs are also identified through complaints received from local residents during the course of the year.

The county uses CRAB's standards of good practice for its design standards, and for the criteria required to define level of improvements.

Manual adjustments are occasionally made to the priority order by the county engineer or county commissioners because of unexpectedly severe winter damage, or to respond to specific constituent concerns.

Analysis

Impacts of Local Policy and Plans

The current county comprehensive plan, passed in 1985, reflects the era of high growth experienced by Benton in the seventies and early eighties, "... Benton County is today faced with a situation of being one of the fastest growing counties in the nation, while its most important tool for dealing with that growth (the land use plan) covers less than five percent of the county area." Since this was written however, growth has slowed drastically. Nevertheless, the transportation element of the land use plan contains one of the transportation issues most important to the county today. That is, "... The importance of good transportation planning is difficult to overemphasize. A prime example is the importance of good rail

and truck service to the firms and industries that constitute the county's economic base. Good transportation links are essential to the county's economic well-being."

Despite this policy objective, the quality of the consistency review of the six-year plan with the land use plan has been variable in the last few years, although planning and engineering jointly coordinated the development of the current land use plan. Partly from the county's transportation retrenchment from new construction to maintenance, and also from the general nature of the plan, the land use plan has not been serving as the cornerstone of the county's transportation programming, as both county engineers and planners agree that it should.

The county planning office receives a copy of the proposed six-year plan for review before it gets submitted to the board of county commissioners. This review is informal; there is no formal sign off or agreement required from the county planner or county planning commission before the six-year plan is submitted to the commissioners. The board of county commissioners usually accepts the county engineer's recommendations for the six-year plan, occasionally requesting that projects be added. The board also reviews the six-year plan in terms of its consistency with the land use plan, and has altered the priority order of the projects because of it, but this is not frequently done.

Influence of State Policies and Programs

In general, state funding programs address the county's needs fairly well. It is felt that state formulas develop an appropriate needs priority array for the county, and that even if the county were not required to complete a six-year plan, it would do so because of its utility as a capital planning and programming tool. One of the difficulties the county has with the state programming, prioritization, and funding process, however, is the uncertainty about which priority projects will get funded from year to year. This makes long-term (or six-year) programming difficult to do with any degree of accuracy.

Different timeframes have also presented some problems to the county. With WSDOT on the biennial cycle and cities and counties on a calendar fiscal year, coordination is much more difficult between agencies, particularly with TIB projects, which require many participants. The county has had some trouble making use of TIB because of this issue. Coming up with the matching funds is also a continual problem for Benton, and counties with similar demographics.

System continuity needs to be better addressed in Benton through long-range coordination between all jurisdictions. It was felt that TIB is not the answer to this issue, because it doesn't have a prioritizing system, and it is not based on need but on geographical and participatory criteria. This

means that there is no regional review. The district engineer suggested that a review system should be considered which prioritizes needs regardless of jurisdiction.

County officials feel that it is not important that programs be consistent between jurisdictions, as long as there is a consistent and reasonable regional review process and clear, broad guidelines.

Benton County has voted to be included in the Growth Management Act. The motivation for this was the desire to avoid the situation which the western part of the state currently is in. Although the kind of information exchange required by the growth management has been active in Benton County for a long time, this will be a new initiative for the county. There is some concern about the level of bureaucracy required by the Growth Management Act; the county would like to have some mechanism to opt out of it should it wish to do so. There is also concern at the county level that the state will find itself in the position of mandating specific processes without providing the resources to support them.

In general, the Growth Management Act is seen as positive, as is the WSDOT initiative to hire planning staff and develop a more active and cooperative role in planning, particularly with regard to route development and continuity.

Interjurisdictional Coordination

Coordination among jurisdictions in this region is seen as positive, and takes place not only between the cities in Benton County and the county itself, but also between Franklin and Benton Counties, as well as abutting counties in Oregon.

The county submits the six-year plan to the Benton Franklin Conference of Governments (the MPO), which it meets with monthly to exchange information. In addition, the conference has a technical advisory committee to the governmental conference. The district WSDOT office also reviews the six-year plan, however, not from a regional consistency point of view.

The observation was made that the formal review process for UATA and TIA projects does not work as well as the informal review process. The county submits those projects to the MPO, which has to send back a form notifying the county that it has reviewed those projects. This review is superficial. The informal coordination that occurs at monthly meetings where information is exchanged between jurisdictions about what is happening with programming or projects is more useful to county officials.

TIA's requirement for multi-jurisdiction coordination is seen as very positive because it has encouraged agencies that traditionally had no communication to start exchanging information, particularly the state DOT.

The best project examples in Benton of good interjurisdictional coordination are now TIA projects.

A.5 Yakima County

Context for Highway Programming

Employment, Population and Road System Characteristics

Yakima County was created in 1865. According to the 1976 Yakima County Comprehensive Land Use Plan, livestock raising was initially the major economic activity of the settlers. When the Northern Pacific's transcontinental rail line reached the area in 1886, large investments in irrigation were made to attract more settlement. The Sunnyside Canal system was started in 1890 and the Congdon and Selah Canals in 1894 to irrigate vast acreages of the arid valley. By 1900, the Yakima Valley contained the largest irrigated acreage in Washington. In a 20-year period (1890-1910) the population of the valley increased sixfold. Later, between 1940 and 1950, there was a 37 percent growth rate. Population and employment grew steadily as market outlets expanded, irrigated acreages increased and management techniques improved. The pattern of land use was established for the future, with the population centered around the market towns of Yakima, Union Gap, and Sunnyside, and to a lesser extent, around the smaller cities of the county, with a large amount of irrigated crop and fruitland giving way at higher elevations to unirrigated rangeland, dryland farming, and timberland.

Yakima is now the sixth largest county in the state in terms of its population, and it is still primarily agricultural. Although population growth has slowed considerably since the 1940's, Yakima did experience a 13 percent increase in its population in the incorporated parts of the county between 1980 and 1990. Table A.5.1 shows that Yakima has a 1990 population of 100,582 in its incorporated areas, and 88,241 in its unincorporated areas for a total county population of 188,823. The largest city in the county is the city of Yakima, with a population in 1990 of 54,827.

Table A.5.2 shows that the agriculture industry still employs the largest number of people in the county, followed by the service industry, retail trade, and government. Table A.5.3 indicates there has been a decline in unemployment in Yakima from 10.5 percent to 9.75 percent between 1980 and 1990.

Table A.5.1 Yakima County Population

	1980	1990	Percent Change
Incorporated	89,046	100,582	13%
Unincorporated	83,462	88,241	6%
Total	**172,508**	**188,823**	**9%**

Source: Office of Financial Management Forecasting Division, June 28, 1991.

Table A.5.2 Yakima County 1989 Employment

Industry	Major Industries			
	Av. # of Employees	Percent of Total	Wages Paid ($ in 00's)	Percent of Total
Agriculture, Forestry, & Fishing	14,421	20.2	126,028	11.9
Mining	63	0.0	1,330	0.1
Construction	2,153	3.0	39,344	3.7
Manufacturing	8,566	12.0	175,201	16.5
Trans., Comm., & Public Utilities	2,629	3.7	53,780	5.1
Wholesale Trade	6,424	9.0	105,625	10.0
Retail Trade	11,996	16.8	125,697	11.9
Fin., Ins., & Real Estate	1,830	2.6	32,172	3.0
Services	12,943	18.1	179,462	17.0
Government (Local, State & Federal)	10,321	14.5	219,980	20.8
Total	**71,341**	**100.0**	**1,058,619**	**100.0**

Source: Washington State Employment Security Council

Table A.5.3 Yakima County 1980-1990 Employment Growth

	Employable	Employed	Unemployed	Percent
1980	82,870	74,210	8,660	10.5
1990	101,500	91,600	9,900	9.75
	+18,630	+17,390	+1,240	
	(+22.4%)	(+23.4%)	(+14.3%)	

Source: Yakima County Planning Office.

The county owns 1,746 miles of road, most of which (49.8 percent) are rural access. Table A.5.4 describes the county road inventory by functional class, surface type, and urban and rural split. Nearly 40 percent, or 700 miles, of the county's roads are gravel, primarily rural access roads.

Table A.5.5 shows the county's VMT by functional class of road.

Key Transportation Issues, Needs, and Priorities

Economic development in Yakima has been very stable in the past because of the county's agricultural base. This has cushioned the county from extreme economic highs or lows. However, Yakima is on the edge of a major growth spurt, triggered by flight from the Puget Sound area and from California. Many "low-tech" industries, such as a record jacket production company, are moving into the area attracted by the low cost of living, availability of residential and commercial space, and good services. This impending growth spurt has been evidenced by increasing numbers of residential and commercial permit issuances, more traffic, and extended peak congestion periods. The county is 70 percent ahead of building permit issuances from last year.

While the availability of water is the most important issue affecting economic development in Yakima, it is also crucial for the county to integrate its transportation network between air, road, water, and rail. This improvement in the transportation network is one of the cornerstones to the county's economic development. For instance, one of the emerging issues for the county is that there is no direct connection between Yakima International Airport and a major arterial.

Also, more and more people are interested in the idea of building a "ring road" around the cities of Yakima and Union Gap, and a north/south arterial corridor to the west of the urban area. Employers examining the area with plans to move a facility into it will view Yakima from the perspective of access and visibility.

Road Expenditures and Revenue Sources

Yakima County receives funds from RAP, CAPP, UATA, and PWTF, in addition to Federal sources (FAS, FAUS), and county sources. Table A.5.6 details the county's 1990 anticipated revenues. Approximately 45.3 percent of county revenues comes from the state, another 13.7 percent is from the Federal government, and the county provides nearly 41 percent of its annual revenues. Total revenue anticipated for 1990 was estimated to be $12,047,508.

Table A.5.4 Yakima County Road Inventory by Functional Class 1990

Functional Class	Mileage	Percent of Total
Major Collector (07)	333.56	19.1
Minor Collector (08)	384.45	22.0
Rural Access (09)	869.89	49.8
	1,587.90	**90.9**
Principal Arterial (14, 15)	11.16	0.7
Minor Arterial (16)	24.41	1.4
Collector Arterial (17)	28.10	1.6
Urban Access (19)	94.04	5.4
	157.71	**9.1**
Total County Miles	**1,745.61**	**100**
Surface Type		
Paved	1,039.31	59.5
Gravel	697.49	40.0
Unimproved	8.81	0.5
	1,745.61	**100**
Urban/Rural Split		
Urban	157.71	9.0
Rural	1,587.90	91.0

Source: Yakima County Engineer's Office.

Table A.5.5 Yakima County VMT by Functional Class of Road

	Rural			Urban				
	Major Collector (07)	Minor Collector (08)	Local[1] (09, 10)	Principal Arterial (14)	Minor Arterial (16)	Collector[2] (17, 18)	Local[3] (19, 20)	Totals
Road Miles	343	402	887	11	15	27	83	**1,768**
Lane-Miles	706	803	1,773	38	31	54	166	**3,571**
VMT (100s)	5,127	1,907	1,524	732	523	414	258	**10,485**

(1) Rural Local = Agriculture, Commercial, Industrial, and Residential

(2) Urban Collector = Nonresidential and Residential

(3) Urban Local = Commercial/Industrial and Residential

Source: Wilbur Smith

Table A.5.6 Yakima County Actual Anticipated Revenues

Source	Amount	% of Total
County		
Property Taxes	$4,813,944*	
Private Harvest Taxes	113,714	
Local Motor Vehicle Excise Tax	4,378	
Street and Curb Permits	1,229	
Subtotal	**$4,933,265**	**40.9%**
Federal		
U.S. Fish & Wildlife Refuge Tax	$2,382	
Federal Forest	1,532,204	
Federal-Aid: FAUS, FAS, etc.	56,297	
Oil Rebate	63,120	
Subtotal	**$1,654,003**	**13.7%**
State		
RAP	$154,410	
CAPP	428,279	
UATA	107,879	
Gas Tax	4,114,199**	
PWTF	33,360	
Misc. (sale of map, fees, interest, inspections, etc.)	588,753	
Subtotal	**$5,426,880**	**45%**
Total Anticipated Revenues	**$12,014,148**	

* WSDOT Revenue and Expenditure Reports list $4,810,000 as Yakima's 1990 property tax revenue.

** WSDOT Revenue and Expenditure Reports list $3,791,000 as Yakima's 1990 gas tax revenue.

Source: Yakima County Engineer's Office.

Table A.5.7 details the county's anticipated expenditures for 1990. The expenditure budget is divided into two sections: construction and maintenance. There are several other sections, such as debt service, operating transfers, and so forth, but the bulk of the expenditures occur in the first two categories. Maintenance expenditure items constitute about 53 percent of the total budget, and construction items constitute about 30 percent of the total budget.

County officials are now preparing the county's 1992 budget. Table A.5.8 details the anticipated county revenue for the next fiscal year. Of the major revenue sources funding the county, nearly 80 percent will come from the state gas tax distribution and local road levy, just over 11 percent will come from Federal-Aid (forest, FAS, FAUS), and slightly over nine percent will be RAP and CAPP funds. FAS and FAUS funds are fairly constant, as is the RAP amount. The forest excise tax amount has been steadily decreasing. The total anticipated revenue contribution for 1992 amounts to $11,960,000.

It is the county's practice to allocate funds for maintenance and administration, and then do whatever additional improvements to the system that it can afford. For 1992, 66 percent of the budget is dedicated to maintenance and administration, resulting in about 34 percent, or just over $4 million, remaining for construction. The third part of this table gives the recommended expenditure breakdown of dollars and percent of budget item to total construction budget. The CAPP overlays represent almost 24 percent of the budget dedicated to maintenance overlays and preservation. The "locally funded arterial construction" category consists of county funded improvements.

County officials set aside money for safety improvements such as guard rails, intersection safety projects, and other types of improvements every year as an answer to liability issues. After the county meets its bridge reconstruction requirements, county officials balance out the remaining budget among construction items. The number and condition of gravel roads are a serious issue for the county, and the money that is spent every year on gravel roads buys the county about four or five miles of paving out of the 700 miles of existing gravel road. This constitutes another 22.2 percent of the budget. County officials point out that this is not an inappropriate expenditure – it represents less than a quarter of the overall program – given the number of gravel roads.

The county has established quite a few road improvement districts (RID) in the past. An RID is a mechanism which allows county residents abutting a road to fund its improvement. At the moment, there is one RID operating, two ready for design, and several outstanding petitions. The policy of the board of county commissioners is that if local people are willing to assist in funding improvements, the county should make these improvements a priority of its annual construction agenda, and provide some

Table A.5.7 Yakima County 1990 Anticipated Expenditures

Item	Amount	% of Total
Construction		
Roadway	$1,118,935	
Eng., R.-O.-W.	828,275	
Storm Drainage, Structures, Sidewalks, Special Purpose Paths	739,092	
Street Lighting	14,149	
Traffic Control Devices	320,630	
Admin., Overhead, and Roadside Development	51,644	
Subtotal	**$3,072,725**	**29.5%**
Maintenance		
Roadway	$3,213,955	
Storm Drainage, Structures, Sidewalks	552,584	
Street Lighting	34,841	
Traffic Control Devices	593,969	
Parking Facilities, Snow and Ice Control, Street Cleaning	242,508	
Roadside Development	382,739	
Admin & Ops.	509,538	
Subtotal	**5,530,134**	**53.2%**
Other Street Related Expenditures (Gen. Admin. Capitalized Expenditures, etc.)	1,720,732	16.5%
Debt Service	45,928	0
Operating Transfers Out	17,430	0
Total Anticipated Expenditures	$10,386,949	
1990 Expenditures by Functional Class		
Urban Arterials	$899,000	80%
Rural Arterials	4,442,000	42.8%
Access Roads	5,046,000	
	$10,387,000	

Source: Yakima County Engineer's Office.

Table A.5.8 Yakima County 1992 Draft Estimated Revenue Sources

Gas Tax	$4,600,000
Road Levy	$4,900,000
Federal Forest	800,000
Federal-Aid Secondary	440,000*
Federal-Aid Urban	110,000*
RAP	400,000
CAPP	710,000
Total	**$11,960,000**

* The Federal Transportation Act expires in 1991. Funding after 1991 assumes that the Act will be extended or replaced.

Dollars Available for Construction

Total Revenue	$11,960,000
Maintenance	-6,500,000
Administration	-1,400,000
Total	**$4,060,000 / Year**

Recommended Expenditure Breakdown of Dollars

Preservation - CAPP Overlays	$950,000	(23.4%)
Safety Improvements	300,000	(7.4%)
Rural Access Road Construction	900,000	(22.2%)
Rural Collector - RAP Projects	400,000	(9.9%)
Urban Access RID Participation	200,000	(4.9%)
Bridge Reconstruction	60,000	(1.5%)
Locally Funded Arterial Construction	500,000	(12.3%)
Federally Funded Arterials	550,000	(13.5%)
Match Reserve (RAP, TIA, FAS, Etc.)	200,000	(4.9%)
Total	**$4,060,000**	**(100%)**

Source: Yakima County Engineer's Office.

additional funding. County officials say that, for instance, the $200,000 represented in the draft 1992 budget for urban access RID participation leverages an $800,000 project. If the RID match money does not get used in 1992, it will be added to the match reserve fund for RAP, TIA, FAS, and other programs requiring local match dollars. County officials emphasize the importance to the county of ensuring adequate funding for matching programs.

The county does not require developer fees for road improvements, and if a developer is required to make improvements to a facility, the cost of those improvements does not show up in the county highway budget as revenue. The county simply takes ownership of the improved facility.

Description of the Programming Process

Programming Structure

Yakima County does not have program categories analogous to the state's. The county's categories are pavement preservation, maintenance, and improvement.

County officials do not have the same programming and prioritization process for all sources of funds. The county uses several different prioritization methods depending on the functional class of road and pavement type, and most of the county's arterial work is driven by the availability of funding. The county uses funding eligibility as a means of prioritization. On projects that don't have state or Federal funding, the county prioritizes based on pavement condition, safety, alignment, and public input.

Programming Methods and Processes

Yakima County uses the state auditor's Budgeting, Accounting, and Reporting System (BARS) manual to determine the definition of maintenance and construction items. In addition, the design standards used by the county are largely WSDOT's standard specifications and standard designs, although the county also has developed some design standards of its own.

All of the county's pavement improvement needs are identified through the county's PMS system, which was developed by CRAB. In addition, for the last two years Yakima County has been sharing a road rater with the Benton-Franklin Conference of Governments. There has been so much demand for the road tester that Yakima County is now considering getting its own road rater.

The county has had a pavement condition rating system for the last 30 years. Although not originally a computerized process, it has been a process in which roads were evaluated, rated, and sealcoated on an annual

basis. This system has now been incorporated into the computerized PMS, and has become more sophisticated. County officials feel that the county's road system is in good shape because of this long-time use of PMS, and its commitment to annual maintenance and sealcoats.

Yakima County has had a strong commitment to solid, well thought out design standards in terms of the structural strength of roads for many years. For this reason, Yakima does not have many of the problems other counties do with regard to maintenance expenses.

Most improvements to the county arterial system are driven by the availability of funds from various funding sources. Consequently, the criteria used to prioritize individual arterial projects for funding consideration are dependent on the criteria the funding source used to develop their priority arrays. For instance, major and minor collectors for RAP projects (functional classes 07 and 08) are selected based on how well the arterial projects meet the RAP priority criteria. Likewise, projects submitted to TIB for UATA funding are selected based on how well the projects meet UATA priority criteria. Arterial projects using local or Federal funds are generally prioritized based on pavement condition, an evaluation of growth patterns, public input, alignment concerns, and other safety concerns.

All improvements to the county's rural access roads are prioritized based on an evaluation of traffic volume, accident history, maintenance history, the availability of right-of-way, and an assessment of how the roadway contributes to the overall county transportation system. Table A.5.9 shows the point system developed for the rural access road priority rating criteria. In developing these criteria, the county reviewed the RAP and UATA rating criteria, and added the right-of-way criteria to the county's iteration of the priority rating formula. This was done because county officials felt that it was more productive to try to improve or construct roads where the right-of-way was available. A right-of-way availability analysis is conducted; if it looks like there will be no available right-of-way, projects are ranked lower on the needs list. Occasionally, residents call to ask about the possibility of improvement to their road, and when told there was no available right-of-way, they will volunteer to petition neighbors to get right-of-way donated to the county.

The priority array for rural access roads is primarily for gravel roads. County officials will develop a similar rating system for arterial projects, separate from its current use of funding program priority formulas to develop a funding priority list. The county has had such a system in the past, however the mainframe program has deteriorated to the point where it isn't possible to maintain the system. This system was very similar to the current priority formulas used by funding agencies, but it also took into

Table A.5.9 Yakima County Rural Access Road Priority Rating Criteria

ADT (30 Points) 32% of Total

ADT	Points
150-250	15
250-349	20
350-449	25
450+	30

Right-of-Way Availability (25 Points 26% of Total

Width	Points
0-39	10
40-49	15
50-59	20
60+	25

Transportation Route Impact (20 Points) 21% of Total

Gap Project - 10 Points
Project Impact - 10 Points

Maintenance Requirements (10 points) 11% of Total

Level	Points
High	10
Medium	6
Low	2

Accident History (10 Points) 10% of Total

Accidents	Points
0	0
1	5
2-3	8
4+	10

Source: Yakima County Engineer's Office.

consideration adjacent land use. The county has held off renovating this system since CRAB has indicated it will make a system available, and the county is now engaged in fulfilling the requirements for the GMA. As the county goes through the transportation element in updating the comprehensive land use plan, and the RTPO develops, county officials feel that the nature of the priority system which should be used for arterial projects will become apparent. The current priority rating criteria for rural access roads have been in use since 1986.

The priority array is presented to the board of county commissioners, with the county engineer's recommendation as to the most important county priority projects. Occasionally county commissioners will reorder the projects, although county commissioners are confident that the priority array develops the appropriate county priorities. In addition, the county engineer's office applies a "qualitative overlay" to the priority order resulting from application of the formulas. This overlay is based on input from the field engineers, and the experience and knowledge of long-time county engineers of the physical system. The engineers' professional judgement takes into consideration a combination of safety, condition, alignment, the potential for growth, and how to best service this potential. The public is also involved in the process, and complaints about specific roads are often submitted to the board of county commissioners or to the county engineer. This input is also factored into the final priority array. According to the county engineer, "...The public is a very good indicator of not necessarily the highest priority, but they do bring to your attention a variety of priorities which can then be factored into the process."

Analysis

Impacts of Local Policies and Plans

For Yakima County, a local policy which has a direct impact on the county's programming decisions is the city of Yakima's aggressive annexation policy. County commissioners are reluctant to fund urban arterial projects that are in an area that county officials know is going to be annexed in the near future by another agency, in this case the city. County officials use as an example of this issue the improvements that were made to the road serving the Sun Dome. The county had just finished the contract, investing $900,000 in improvements, when the city annexed the entire area. This has had the effect of encouraging county officials to make improvements further out from the city limits.

Influence of State Policies and Programs

The most important issue for Yakima is consistency in state funding. Long-range planning or programming is difficult when there is uncertainty about funding levels from year to year; there is no assurance that local

jurisdictions can address priority projects. Rather than having specific, arbitrary formulas, or criteria which qualify "appropriate" projects, it would be more useful to counties to have general criteria for how funds are spent, and more discretion given to local jurisdictions. It was suggested that a mechanism such as a minimum funding floor would be more appropriate.

An example of this inflexibility to the county is gravel roads. Essentially, 90 percent of the county system is rural. If the county is only converting five miles a year out of 700 miles of gravel road, county officials feel that this is not a lot of progress. The rural access road priority array only looks at access roads that have more than 150 cars a day using them. About 142 miles of gravel road consistently bear this level of traffic. If the county programs $900,000 a year for gravel roads, there is 30 years of work on this issue alone. If they had more flexibility in applying funds, the county would give a higher priority to addressing gravel road needs.

Some county officials also feel that the TIA system of giving bonus points for multi-jurisdictional projects is good. An example was given where prior to TIA, the city of Yakima and the county both applied to the state for funding assistance for contiguous sections of the same road. The city received its portion of funding, but the county did not and couldn't do its share of the project. There has been major progress since then in terms of rational project funding. Also, county officials stated that RAP is a "tremendous change for the better." For Yakima, the RAP program is particularly applicable because of the particularly large number of rail abandonments which have occurred here, forcing traffic to use small gravel roads that were never meant for that purpose. On the other hand, TIB is also viewed as positive for urban area projects.

The requirements of the Growth Management Act are viewed by the county as positive, although there are reservations about what the state will require in terms of review processes, and the level of state support. Officials realize that the process may take years to actually work out, but that in the end the resulting coordination between the city of Yakima, county, WSDOT, and other jurisdictions will be positive for the region.

Bicycles, transit, and ridesharing are not yet major issues in the county – there is no HOV lane, there are only standalone bike trails, and only small, individual vanpools. There is an attempt being made, however, to determine whether a countywide public transit benefit area would be appropriate, and the county is meeting with all the cities in the county to see if they want to be included in a transit benefit district. These issues may become more and more important to the planning process as local jurisdictions become more involved with the requirements of the Growth Management Act. However, the area is not conducive to HOV lanes because of the lack of centralized industry in the valley.

The only coordination problem created for the county because of the difference in state and local timeframes is that the county occasionally has to spend allotted monies before the end of the state's fiscal year in June. Because this is in the middle of the county's construction season, this is sometimes awkward.

Interjurisdictional Coordination

There has been very little serious coordination in the past between planning and engineering in Yakima County. The most recent comprehensive land use plan was adopted in 1976, and now is too out of date to serve much use to transportation planning. Also, in the past there has typically been a one to one and a half percent growth rate, so planning has not been seen as providing a critical function to the county. Where county officials have concerns about the Growth Management Act, in addition to the level of state support, it is that planning is not a very understood or accepted function in the county. Because capacity has not been an issue in eastern Washington yet, with the exception of some areas around Spokane, there has been very little development of local or regional planning, and it has yet to become a local priority. The county planner says that the county's six-year plan is the primary document for planning purposes.

The one exception to this is the agreement on an urban area land use plan among the city of Yakima, the county, and the abutting city of Union Gap, and coordination among these jurisdictions on plan elements is fairly frequent.

The county has had longstanding intergovernmental agreements with neighboring counties, primarily focused on continuity issues of road maintenance. These are mostly staff-driven agreements, so policy officials at the board of county commissioners level are usually not involved.

A.6 Adams County

Context for Highway Programming

Employment, Population and Road System Characteristics

Table A.6.1 presents employment, population and road system characteristics for Adams County which provide a context for understanding the county's highway programming process. Adams County is sparsely populated, with 13,606 people spread over 1,894 square miles. Approximately 55 percent of the population lives in the five incorporated areas of Ritzville, Othello, Lind, Washtucna, and Hatton. Thirty-three percent of the population lives in Othello, the largest city in the county.

Table A.6.1 Adams County Characteristics

General[1]		
Population - unincorporated[2]	(1990)	6,466
Population - total	(1990)	13,603
Land Area	(1990)	1,894 sq. miles
Density		7.2 person/sq. mile
Employment	(1990)	6,510
Per Capita Income	(1987)	14,315
Trends		
Population	(1980-90)	+2.6%
Employment	(1980-90)	-4.4%
Road Systems		
County Miles	(1991)	1,787
Oil	(1991)	606
Gravel or Unimproved	(1991)	1,181
State Miles[3]		246.25
City Miles[3]		69.42
No. of Bridges (over 20')	(1991)	137

1 Adams County Department of Public Works.
2 Office of Financial Management, Forecasting Division, June 28, 1991.
3 1987 HPMS Master File, WSDOT.

Agriculture dominates the economy of Adams County. Farmers grow a variety of vegetables, fruits, grains, and seed crops for export throughout the state as well as to some foreign destinations. The most fertile soils are found in the southwest portion of the county, which is well irrigated by the Columbia River project. This area produces the greatest variety of crops, and houses several food processing facilities. The remainder of the county is dry, and produces a limited number of crops including potatoes, wheat, and alfalfa.

Farm to market access is the most critical transportation issue in Adams County. Until recently, the county depended on the railroads for shipping agricultural products to market. However, with rail abandonments in the northern and eastern parts of the county, and reduced service in the southwestern part of the county, farmers now depend on the highway to carry goods to market.

The new dependence on the county's roads to transport goods to market is of great concern to the county planners and engineers. The county maintains 1,787 miles of county-owned roads. Of these, 606 miles are oil gravel roads, and the remainder are gravel or unimproved. None of the county's roads are classified as urban. The road system was built several decades ago to support small trucks that do not exceed two tons in weight. Now the road system must support large trucks loaded with agricultural goods. In addition, load restrictions placed on the highways due to heavy frosts generally occur at the same time that grain shipping occurs. These factors create significant wear and tear on the road system. This condition has occurred as a result of the state's decision to allow abandonment of the railroads. The state has not provided additional funds to the county to improve the roads to the standards necessary to handle the additional shipping, however.

The county is responsible for 137 bridges over 20 feet in length, and numerous drainage structures (bridges less than 20 feet in length). Major state and Federal roads in the county include Interstate 90, which traverses the county in an east-west direction, and state routes 17, 21, 24, 16, and 261.

Key Transportation Issues and Needs

Preservation of the existing road system is the main objective of the county's programming and prioritization process. This is particularly important given the stresses on the system because of the heavy use for agricultural shipments, and the need to ensure timely delivery of goods to market. The road system also sustains regular damage due to frost heaves and springtime flooding. Floods frequently wash out gravel and unimproved roads and culverts, requiring immediate repairs.

Economic development is a passive goal. While highway programming is not done to attract development, the county will respond to new busi-

nesses by programming improvements to roads that serve the business. For example, the county is currently trying to secure RAP funds to upgrade a gravel road that serves a potato processing facility.

Road Expenditure and Revenue Sources

As shown in Table A.6.2, the 1990 county road budget is $4.6 million. Over 66 percent of this is allocated to bridge and road maintenance, and approximately 18 percent is allocated to new construction (or reconstruction). The remaining five percent covers general administration and reimbursables.

State sources will provide 78 percent of the highway funds used in Adams County in 1991. The state motor vehicle fuel tax alone will account for over 50 percent of all 1991 highway funds expended in Adams County. Another 18 percent of programmed funds will come from the Rural Arterial Program (RAP). Other state sources include CAPP and Washington Utility Transportation Commission funds.

Local sources are programmed to pay for approximately 16 percent of highway projects in Adams County. Over 94 percent of local funds come directly from property taxes. The remainder of local funds are derived from licenses, fees, and investment interest. No 1990 local tax options have been implemented in Adams County.

The county is not eligible for significant amounts of Federal funds. Very few of the county's highways are eligible for Federal-Aid secondary funds (FAS), and none is classified as an urban highway eligible for Federal funds. Of the total highway budget for 1991, only $134,000 (less than three percent) will come from Federal sources. A total of $132,000 of these funds will be provided through the Federal-Aid Safety Act for railroads.

Description of the Programming Process

Programming Categories

Adams County's road budget is divided into five categories, of which two – road and bridge construction, and road and bridge maintenance – account for over 92 percent of all expenditures. Maintenance includes activities such as pre-level treatments, asphalt patches, crack sealing, shoulder restoration, pavement management, regraveling, and new culvert installation. Construction generally refers to reconstruction projects that require sub-grade preparation, and projects that include rehabilitation or restoration. The county is not building any new roads or bridges. The remaining three categories are general administration, reimbursables, and paths and trails.

Table A.6.2 Adams County Road Budget, 1990

Revenues	
Local	
Property tax	$ 824,483
Leasehold excise tax	4,908
State	
Gas tax	3,630,682
Intgov. services	
Road maintenance	4,951
Investment Interest	26,866
Other misc.	16,654
Federal	
Federal-Aid	84,446
Fish and Wildlife Refuge Tax	1,014
Total 1990 Revenues	**$ 4,594,004**
Expenditures	
Construction (road and bridge)	$ 815,364
Maintenance (road and bridge)	2,892,739
General Administration	184,889
Operating Transfers	39,403
Total 1990 Expenditures	**$ 3,932,395**

Source: WSDOT.

Prioritization Methods – Maintenance

Each year the county hires a private firm to inspect all paved county roads to identify maintenance needs. The firm videotapes the roads and analyzes the tapes to identify cracks and other maintenance needs. This information on road conditions is entered into the Washington State Counties Pavement Management System, as well as into a pavement management system developed by the private firm. Both pavement management systems then assign a ranking of 1-100 to each road, with 100 being the highest score (i.e., the road is in perfect condition).

The ratings developed by the PMS programs are given to the Adams County public works director, the administrative coordinator, and chief engineer for review. The county staff selects a rating, such as 50, and considers all roads that rate below this number as potential candidates for maintenance work. The staff selects final candidate projects based on their knowledge of each road.

At the same time, the department's road supervisors prepare a list of priority projects based on their knowledge of the roads in the county. The two groups then compare lists, and any project appearing on both lists receives top priority. Other factors that affect the final list of projects include maintenance costs, accident histories, the county's liability, and input from truck drivers and businesses. No set formula is used.

At times, political considerations will influence maintenance decisions. The county commissioners must review and accept the maintenance plan, and may make suggestions based on the interests of their constituents. For the most part, however, the commissioners defer to the decisions of the professional staff.

Prioritization Methods – Construction

Capital improvement needs are identified on an annual basis by the public works staff. Road supervisors, the chief engineer, and the public works director all play key roles in identifying the projects to be undertaken. County commissioners, planners, and citizens may also identify necessary projects. Because funding available for reconstruction in Adams County is limited, only about five miles of highway reconstruction occurs each year.

Adams County develops a six-year road program, as required by the state priority programming regulations and CRAB. The county revises the plan every year to reflect changes that have occurred during the previous year, and anticipated funding sources. The biggest task in developing the six-year plan is to incorporate those projects that are funded each biennium. The county tries to place these projects in the first two years of the six-year plan. In fact, because the county uses both CAPP and RAP funds, which are awarded on a biennium basis, the six-year plan really operates as a two-year plan. While staff tries to systematically identify projects for the

remaining four years, this portion of the six-year plan is generally considered a wish list. The availability of RAP funds significantly affects the final composition of the six-year plan, which is updated on an annual basis.

To select projects for RAP funding, the county officials evaluate each candidate project based on traffic volume, type of usage (recreation, farm to market, etc.), type of road (through road versus local access), and number of accidents. No standard formula is used. Upon completion of the ranking, officials fill out a prospectus for the top candidate projects, and file the prospectuses with CRAB.

County officials do not believe that the process for awarding RAP funds is optimal. The fact that the RAP funds are distributed on an annual basis, and the competitive nature of the process make it difficult to plan accurately for future years. This process also can mean that multi-phased projects are not completed in a timely manner. One example in Adams County involves the Lee Road. This road extends between Othello and Bruce. The county has been trying to completely rebuild the road during the past ten years. Funding to rebuild two separate sections of the road was awarded in two different years. However, attempts to fund reconstruction of the remaining four miles of highway has not been forthcoming because the project has not rated highly enough in the competitive process. The county finally has obtained FAS status for the road so that Federal funds can be obtained to complete the project.

County officials also feel that the RAP funding process results in improvements to roads that are not top priority to the county, while less important projects get funded.

Because of the difficulty with securing funds for reconstruction, county officials try to classify as many projects as possible as maintenance projects. This allows for more flexibility in funding, and helps ensure that critical projects are undertaken.

Prioritization of projects for FAS funds has not been an issue in Adams County. Officials identify FAS routes for which funding is available, and then put together a prospectus. The county has not been denied funding for any FAS project. The county prefers the non-competitive nature of these funds, which provides more security in planning highway improvements.

Analysis

Impacts of Local Policies and Plans

Adams County does not have formal policy guidelines that affect highway programming and prioritization. The six-year plan must be approved by both the county commissioners and the planning commission, but these bodies rarely change elements of the plan. The county commission may influence the maintenance or construction program by recommending projects not included in the plans of the public works department, but, in general, they rely on the expertise of staff to develop an appropriate plan for the county.

The unwritten policy of stressing preservation supports the need to maintain farm to market access. The process is aimed at maintaining routes for the transport of agricultural products and processed foods. This policy is supported by the local constituency and the county commissioners. There is not any competing goal at this time.

Influence of State Policies and Programs

The county's highway program has been significantly affected by state policies and programs. The abandonment of the railroad, done with state approval, has resulted in a significant increase in truck volumes and the size of trucks on the county roads. This has increased annual maintenance costs. However, the state has not provided additional funds to the county to address these needs. In addition, the state has not provided support for monitoring the weight of trucks using county roads. Many of the trucks on the county system exceed allowable weight limits, but no scales or patrols are available to enforce the weight limits.

Staff feel that the the competitive nature of RAP funds impedes the planning process. The county would prefer to be told that they will receive a finite level of funding so that programming can occur without uncertainty. In addition, the Adams County public works staff do not believe that the six-year programming process is particularly useful for them, primarily because of the uncertainty of state funding sources.

County officials believe that the findings of the Road Jurisdiction Study (RJS) will impede highway development in Adams County. The RJS recommended that most roads be brought up to standard, but excluded gravel roads from the recommendation. The study also said that standards should not be held to low traffic volume roads. These exclusions mean that most county roads in Adams County will not be improved as a result of the RJC study.

Adams County staff are concerned about the ramifications of pending growth management legislation. However, Adams County is not experiencing growth, and is not sure how to address growth management. Officials are encouraged by the efforts of CRAB to computerize growth management planning for rural counties, thus lessening the burden for the local governments.

Interjurisdictional Coordination

Due to the rural nature of Adams County and the lack of new construction, very few projects have required any type of interjurisdictional coordination. In those cases where coordination has been required between cities and the county, the projects have been completed with full cooperation. Coordination with the state has never been a substantive issue in the county.

Appendix B

City Case Study Findings

The following sections provide detailed findings on case studies in five cities: Seattle, Shelton, Redmond, Spokane, and Vancouver. A list of city officials interviewed for the case studies is provided in Table B.0.

Some of the case studies contain street budget and revenue information. It should be noted that this information has been provided for illustrative purposes only, and is based solely on sample information provided by the cities. It is not necessarily consistent with annual Federal or state funding allocations or grants, due to the ability to defer use of allocations or to borrow ahead for certain funding programs, and to variations in local budgeting practices.

B.1 Seattle

Context for Highway Programming

Employment, Population and Road Network Characteristics

Seattle is the economic and cultural center of the Puget Sound Region. It is the largest city in Washington, with a 1990 population of 516,259. Due to suburbanization trends in the region, the city's population declined from a

Table B.0 City Officials Interviewed

Seattle

Councilmember George Benson, Seattle City Council
John Okamoto, Seattle Engineering Department
Henry Sharpe, Office of Long-Range Planning
Noel Schoneman, Community Transportation Services
Elizabeth Paschke, Financial Management
Robert White, Manager, Capital Planning and Development, METRO

Spokane

Irving B. Reed, Manager, Engineering Services, City Manager's Team
Brad Blegen, Director of Public Works
Tom Arnold, Senior Engineer
Charlie Dotson, City Planner

Redmond

Carol Osborne, Director of Public Works
Larry Works, City Engineer
Dick Barthol, Assistant City Engineer

Shelton

Gary Rhoades, Director of Public Works
Theresa Parsons, City Engineer

Vancouver

Councilmember Ron Hart, Vancouver City Council
John Ostrowski, Director of Public Works
Jo Jones, Vancouver Area Chamber of Commerce
Art Schoonover, Project Control Engineer, WSDOT

high of over 557,000 in 1960 to a low of less than 490,000 in the mid-eighties. Since then, a trend of slow population growth has been established – between 1980 and 1990, the net increase in population was five percent. Table B.1.1 summarizes Seattle's general characteristics.

The Puget Sound Region has seen a 25 percent increase in jobs over the past decade. Employment growth is occurring both in the Seattle Business District and in suburban areas. There are currently about 420,000 jobs in the city of Seattle, accounting for roughly one-half of the jobs in King County. Growth industries within the city include medical research, biotechnology, banking, and insurance. Seattle is also the site of one of the busiest ports in the nation, the University of Washington with over 30,000 students, and a number of sports, cultural, and recreational facilities.

There are 1652 miles of city streets in Seattle. Roughly 29 percent of the mileage consists of arterials. The city owns 84 bridges, and maintains an additional 53 bridges under agreements with other jurisdictions. Seattle is well-served by Metro transit buses, and maintains a free bus zone in the downtown area. An estimated 40 percent of downtown employees use transit to get to work. Ferry service is also provided to downtown – the Washington State Ferry System operates routes between Seattle and Vashon and Bainbridge Islands.

Key Transportation Issues, Needs and Priorities

Population and employment growth in the Puget Sound Region, coupled with increasing levels of automobile dependency, have resulted in a 23 percent increase in the volume of weekday traffic entering and leaving the city between 1978 and 1989. Growth in traffic has accelerated since 1983 as a result of a surge in the level of housing and commercial development. Traffic congestion and its impacts on neighborhoods is an important concern in Seattle. A number of programs have been established to protect neighborhoods from traffic intrusion, through installation of traffic circles, restricting on-street parking to residents, and monitoring of traffic speeds.

The city's transportation investment priorities are to maintain the integrity of existing infrastructure, improve efficiency and safety of the transportation system, and focus on improvements which are designed to move people as opposed to vehicles. Transportation policies encourage provisions for transit, pedestrian and bicycle movement, and clearly discourage actions which accommodate increased vehicular traffic, particularly in the congested downtown area and residential neighborhoods. While through-traffic within the downtown is discouraged, operational improvements which facilitate vehicular access to and from the regional highway system are supported in order to reduce the tendency for traffic to seek alternate routes on non-arterial streets. Management of conflicts between buses, cars, pedestrians and bicyclists is also a key issue. A major project to address such conflicts – the downtown bus tunnel – was recently completed.

Table B.1.1 Seattle Characteristics

General			
Population[1]	(1990)	516,259	
Land Area[2]	(1990)	83.6	sq. miles
Density	(1990)	617.53	persons/sq. mile
Employment[3]	(1989)	420,000	(est.)
Trends[1]			
Population	(1980-90)	+4.5%	
	(1960-80)	-8.1%	
Road System[4]			
City Miles	(1990)	1,652	
Arterial		478	(29%)
Local Access		1,174	(71%)
State Miles		65	
# Bridges		84	
Transportation Improvement Program[5]	(1991-1996)	$95.0	Million
	(1991)	$30.3	Million

[1] City of Seattle, Office of Long-Range Planning.

[2] U.S. Department of Commerce, County and City Data Book, 1988.

[3] Puget Sound Council of Governments, Vision 2020 Final Environmental Impact Statement.

[4] City of Seattle Engineering Department.

[5] City of Seattle, 1991 Adopted Capital Improvement Program.

Because of limited outside funding for transportation improvements, and reductions in the share of general funds devoted to transportation, the city has not been able to adequately maintain the condition of its infrastructure. The most recent Major Maintenance Plan identified a backlog of almost $200 million in repair needs for roads, bridges, lighting, and traffic control systems. Recent increases in gas taxes and the establishment of the new countywide vehicle registration fee are enabling the city to increase maintenance levels to begin to address this backlog.

Road Expenditures and Revenue Sources

Table B.1.2 summarizes revenue sources used for the city of Seattle's transportation capital improvement program for 1991-1996. A total of $94.6 million in expenditures are planned over the six-year period, split roughly evenly between major maintenance and development projects.

Major maintenance projects are aimed at restoring the condition of deteriorated infrastructure, including bridges, streets, traffic signals, sidewalks, and guardrails. The development category includes operational, design, or capacity improvements to address safety or congestion problems and improve mobility. Examples in this category are new signals, street widening, and street reconstruction. The first year of the program includes $30 million in projects, with roughly 65 percent of funds in the major maintenance category.

Federal revenue sources are projected to pay for nearly 14 percent of six-year program costs. The primary Federal source is the FAUS program, which is expected to provide between $2-3 million per year. State funds are expected to cover another 54 percent of program costs. Most of the state funds (UATA, TIA, PWTF) are awarded on a competitive basis within particular program guidelines. Only the gas tax, which accounts for five percent of the six-year program revenues is discretionary. The major local funding source has historically been bond issues for specific programs. For example, a recent Open Space Bond issue provided $5.8 million for recreational trails. The new King County vehicle registration fee is expected to generate $7 million in revenues over the six-year period. Other local funds include developer fees and payments by other jurisdictions and agencies for joint projects.

Existing bond funds for transportation purposes have been largely used or programmed, and the city is evaluating implementation of a street utility tax to provide a new source of revenues. The street utility tax is one of the new local options passed in the 1990 legislative session, and allows for charges on businesses of up to $2.00 per employee and $2.00 per residential unit. Rates may generate up to 50 percent of the cost of maintenance, operation, and preservation of streets. This finance mechanism can be created by city legislative action, but is subject to repeal by referendum.

Table B.1.2 Seattle TCIP Expenditures and Revenue Sources 1991-1996 (in millions)

	1991		1992-1996		Total	
REVENUES						
Federal						
FAUS	2,369		10,470		12,839	
Other (BR, RR)	77				77	
	2,446	**(8.1%)**	**10,470**	**(16.21%)**	**12,916**	**(13.6%)**
State						
UATA	4,253		8,123		12,376	
TIA	800		6,854		7,654	
Gas Tax	4,776*		20,077		24,853	
PWTF	1,779		3,250		5,029	
Other	320		729		1,049	
	11,928	**(39.4%)**	**39,033**	**(60.3%)**	**50,961**	**(53.7%)**
Local						
Vehicle Registration Fee	1,789		5,461		7,250	
Bonds	12,000		6,461		18,461	
Intergovernmental	1,798		1,159		2,957	
Private	200		1,800		2,000	
	15,787	**(52.2%)**	**14,881**	**(23.0%)**	**30,668**	**(32.3%)**
Unfunded	113	(0.3%)	320	(0.5%)	433	(0.4%)
Total	**20,274**		**64,704**		**94,978**	
EXPENDITURES						
Major Maintenance, Renovation or Replacement	19,505		28,297		47,802	
Development	10,769		36,049		46,818	
Total	**30,274**		**64,346**		**94,620**	

* A portion of the gas tax is used for maintenance and is not used for the TCIP.

Source: City of Seattle.

Description of the Programming Process

Program Structure

As was described earlier, Seattle's capital improvement program is divided into major maintenance and development categories. Each category includes a number of programs for specific purposes (e.g., asphalt street rehabilitation), as well as individual projects.

Table B.1.3 shows programs and projects defined in the 1991-1996 TCIP under major maintenance and development. Fifteen different programs have been established in the major maintenance category. Most are multi-year programs which have been established to repair or replace deteriorated items on a regular schedule. Ten programs are included under the development category. Most of these have relatively limited budgets ($150,000 or less each year), and provide for small-scale improvements such as traffic signals, street lights, residential parking programs, bicycle racks and signs, and administration of the ridesharing program.

Seattle uses FAUS funds to support the arterial resurfacing and concrete rehabilitation programs, and the ridesharing program. The required FAUS match is provided from a combination of the Arterial City Street Fund (ACSF), which is derived from the gas tax, and the city's Transportation Improvement Fund (TIF), which was established in 1988 with excess funds from the West Seattle Freeway Fund. Revenues from the new countywide vehicle registration fee are deposited in a special TIF account.

Other programs, and a few of the smaller projects are funded (for the most part) through a combination of TIF and ACSF. All of the larger projects are funded through either UAB, TIB funds, Public Works Trust Fund loans, Federal grants, contributions from other agencies, special-purpose bond issues, or local improvement districts.

Program Methods and Processes

Figure B.1.1 illustrates the structure of Seattle's capital planning process for transportation projects. Major maintenance and development projects and programs are identified and prioritized using separate processes.

Major Maintenance: Seattle uses an Infrastructure Management Planning System (IMPS) to maintain inventory and condition information for pavements, retaining walls, bridges and traffic signals. The system also includes modules for planning and scheduling of maintenance activities. The pavement management system component calculates a PCR (Pavement Condition Rating) for each segment. Based on the PCR, segments are grouped by condition class (very poor, poor, fair, good, and very good). These categories, together with information on traffic and location provide the basis for prioritization of improvement projects.

Table B.1.3 City of Seattle Programs and Projects in the 1991-1996 TCIP

A. Major Maintenance

1. Infrastructure

Programs

Arterial Resurfacing
Arterial Concrete Street Rehabilitation
Non-Arterial Asphalt Resurfacing
Non-Arterial Concrete Street Rehabilitation
Restabilization and Resealing
Sidewalk Tree Root
Guardrail Rehabilitation
Crash Cushion Replacement
Crosswalk/Lane Line Marker Replacement
Collision Evaluation
CBD Lighting
Electrical Major Maintenance
Parking Meter Replacement
Regulatory Sign Rehabilitation
Bridge Painting

Projects

South Alaska Street Reconstruction
Broadway UATF Signal Improvements
West Emerson Place UATF Street Improvement
Northwest Market Street UATF Street Improvement
Seward Park Avenue South Street Improvements
West Seattle Freeway
First Avenue South Bridge over the Duwamish
Fauntleroy Expressway Cross Beams
37th Avenue East-East Cherry Street Retaining Wall
Ballard Bridge Buffers

B. Development

Programs

Bike Spot Safety
Seattle Ridesharing
Consolidated Neighborhood Traffic
New Traffic Signals
Railroad Crossing Upgrades
Arterial Street Lighting
Neighborhood Arterial Lighting
Transportation Improvement Account Reserve
UATF Funding Reserve
Miscellaneous, Unforeseen, Emergency Fund Reservation

Table B.1.3 City of Seattle Programs and Projects in the 1991-1996 TCIP (continued)

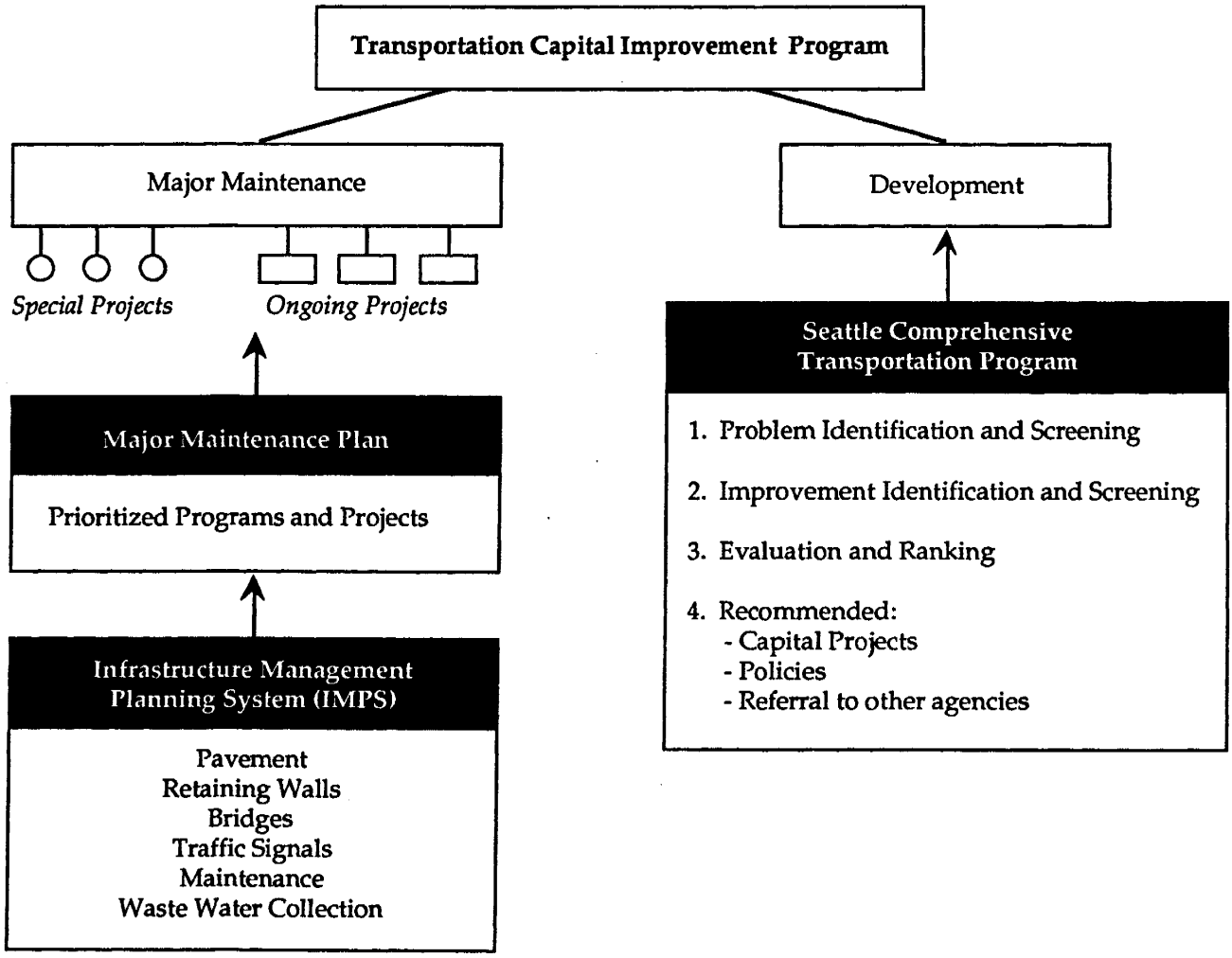
Projects

Mercer Corridor/Seattle Access (EIS/alternatives analysis)
Denny Way Signal Synchronization
Duwamish Multi-Access Bicycle Trail
East Roanoke Street UAB (signal modernization, lighting improvements)
Northeast Northgate Way Improvement Project (reconstruction/ widening/pedestrian improvements)

North 85th/Aurora Widening (minor widening, turn lane, signal phasing)
I-90 Arterial Improvements (participation in EIS)
Meridian Avenue North UATF Street Improvement (widening, intersection
close improvements, drainage, curbs, sidewalks)
James Street UATF Signal Improvements (signal upgrading, improvements to sidewalks, curb ramps, lighting, and drainage)
Lake Union Ship Canal Trail
Duwamish Bikeway
Interbay Bikeway
Burke-Gilman Trail Extension
Sports Arena Traffic Mitigation
University Street LID (pedestrian improvements)

Source: Seattle Engineering Department.

Figure B.1.1 Seattle's Capital Planning Process



Information from these management systems are used (along with other sources) to prepare an annual major maintenance plan. Five categories of needs are addressed in this plan: lighting, structures, traffic control, surfaces and arterial reconstruction. Major maintenance project needs are established in each category based on condition information from the IMPS and engineering judgement. The cost of each project is estimated, and priority ratings are assigned. For lighting, structures, traffic control, and surfaces projects, priority ratings are assigned based on the following four criteria:

- Health & Safety (40 points): To what extent does the program or project promote the safety of the public in its use?

- Structural or System Integrity (30 points): To what extent do the improvements enhance the functional integrity of the system or facility being improved?

- Reduce M&O Costs (20 points): Will the improvements reduce Maintenance and Operating (M&O) costs of the system or facility being improved?

- Other (10 points): Will the improvement have any other favorable impacts on the system or facility itself or on the public's use thereof?

Arterial reconstruction projects included in the needs report are for pavement segments which have failed, and are therefore not going to get any worse. These projects are not scored, but are categorized according to whether an increase in usage is expected, and eligibility for FAUS funds.

Based on the scores, ranked lists of backlog major maintenance needs for each category are produced. For each program or project, estimated costs are divided into three priority categories to identify the portion of work which is a critical priority (needs to be addressed with the next 5-6 years – i.e., the next TCIP period), an intermediate priority or a long-term priority. Each year, entries in the "critical" column are considered for inclusion in the TCIP.

Development: In 1981, the Seattle Comprehensive Transportation Program was initiated. This effort, which was completed in 1984, established a citywide transportation plan and a followed a structured process for identifying and selecting transportation improvements for consideration in the TCIP. The process involved two phases: problem identification and evaluation of proposed improvements.

In the problem identification phase, transportation problems and issues were identified through existing plans, input from staff of city and other relevant agencies, and a community participation process. Problems were

divided into four categories: (I) areawide, (II) corridor, (III) neighborhood and (IV) spot (such as a single intersection or development site).

Each identified problem was then rated to establish a severity level (minor, moderate, or serious). Severity ratings were based on a set of criteria which varied by the category of the problem. For example, criteria for areawide problems focused on pedestrian, vehicular and bicycle circulation, transit mobility, and air quality. Corridor problem criteria included level of service and delay, safety, pedestrian and bicycle access, land use intensity, and development and street compatibility. Each problem was assigned up to three points for each related criterion. Points for all criteria were summed, and used to determine the problem severity category.

The next phase involved identification of potential improvements to address the problems. Suggested improvements were solicited, using a similar process as in the problem identification phase. Improvements were then subject to a screening process to reduce the list of suggestions to a manageable number for detailed evaluation. The screening process involved rating each improvement according to 11 criteria. Improvements were assigned a score from -10 to +10 for each criterion, and projects with a total score less than 25 (out of a maximum possible score of 110) were eliminated from consideration. Detailed evaluation based on a slightly expanded set of criteria was then conducted. These criteria emphasize the following:

- Cost-effectiveness,
- Mobility,
- Safety,
- Compatibility with plans and policies,
- Support for alternative travel modes,
- Neighborhood protection,
- Community expectations,
- Environmental protection, and
- System impacts.

In the detailed evaluation, the same scoring procedure was used as in the screening, but a set of weights were applied to reflect the relative importance of each evaluation criterion. A full list of criteria and weighting factors is shown in Table B.1.4.

Based on the scores, improvements were categorized as high priority (>200 points), medium priority (150-195 points), or low priority (<150 points). Appropriate candidates for the TCIP were separated from improvements which were of a policy nature, and from those which should be implemented by other agencies.

Because of limited available funds for improvement projects, the city has not conducted the formalized process described above since 1985. However, the projects and the rating method developed in the SCTP are considered in the updating of needs for the capital budgeting process.

The city's process for developing its capital improvement program is as follows:

1. Update the status of projects which are currently underway, and ensure adequate funds to support their continuation.

2. Identify new projects from the SCTP, the unfunded needs list, the major maintenance inventory, and neighborhood requests.

3. Submit information on urban arterials to TIB, and review the arterials deficiencies list to identify potential projects eligible for funding. Staff from the Engineering Department, Mayor's Office, Seattle City Council, Budget Office, and Office of Neighborhoods participate in this process.

4. Identify and evaluate potential TIA-eligible projects. This is done by an interdepartmental team, and coordinated with Metro.

5. Review project proposals which require local funds based on administration priorities, land use policies, subarea plans, Metro activities, and geographic distribution.

6. Develop staff recommendation for six-year plan.

7. Review, debate, and approve at division director level.

8. Prepare formal six-year program document, submit for review by executive, Seattle City Council, and Budget Office.

9. Submit program to the MPO and the state.

Table B.1.4 City of Seattle SCTP Transportation Improvement Evaluation Criteria and Weights

Criteria	Weight
Level of Problem	
Severity Category	5
	5
Cost-Effectiveness	
Initial Cost	5
Potential Traveler Cost Reduction	2
Potential Operating Cost Reduction	4
Potential Maintenance Cost Reduction	5
Number of People Served	2
	18
Safety	
Potential Reduction in Number of Accidents	4
Potential Reduction in Accident Severity	4
Potential Reduction in City Liability	4
	12
Mobility	
Improved General Accessibility	6
Improved Elderly/Handicapped Accessibility	3
Improved Emergency Vehicle Access	1
	10
Compatibility with Plans/Policies	
Adopted Seattle Plans/Policies	5
Adopted State Plans/Policies	3
Adopted Plan of Major Institution(s)	2
	10
Alternate Travel Modes	
Facilitation of Transit/Carpools/Vanpools	6
Facilitation of Bicycling/Walking	2
Facilitation of Transfers from SOVs to Other Modes	2
	10
Neighborhood Protection	
Reduction in Through-Traffic or Speeds	5
Reduction of "Parking Intrusion"	5
	10

Table B.1.4 City of Seattle SCTP Transportation Improvement Evaluation Criteria and Weights (continued)

Criteria	Weight
Community Expectations	
Community Support	5
Previous City Commitment	5
	10
Environmental Protection	
Air Quality	3
Noise Pollution	2
Aesthetics	1
Recreational Enhancement	2
Energy Conservation	2
	10
System Impacts	
Level of Service	5
Maintenance Need	5
	10
Unique Circumstances	
Special Considerations	5
	5
Total	**110**
Maximum Possible Score* (1,100)	

* Each criteria is assigned a score between -10 and +10, which is then multiplied by the weighting factor.

Source: City of Seattle.

Analysis

Impacts of Local Policy and Plans

Local policy and plans influence the development of the transportation improvement program in a variety of ways. Most directly, annual TCIP goals, objectives, policies, and guidelines are established to provide direction to guide fund allocation decisions.

General goals for the 1991 TCIP were defined as follows:

- Increase transportation safety;
- Preserve the city's transportation facilities through regularized maintenance;
- Provide access and mobility for all citizens and goods;
- Provide an economical transportation system; and
- Preserve and enhance the city's environment through transportation system improvements.

The more specific guiding policies emphasize priority to programs and projects which maintain the integrity of the existing transportation system, improve efficiency of existing facilities, improve safety, and provide customer service. They also state that projects are to give priority to "moving people" rather than "moving vehicles," and that projects are to be consistent with city land use and transportation plans, and with regional air quality goals. The policies state that selection of TCIP projects is to be based upon a cost-benefit assessment, which considers capital, maintenance and operating costs, environmental costs, and the number of people served.

Funding guidelines were also specified for programming of unrestricted gas tax monies. These guidelines list, in priority order, the types of expenditures to be made:

- Maintain or increase existing major maintenance program levels to maximize use of available FAUS funds.
- Fund continuation of existing TCIP projects scheduled for construction phase in the next year which leverage outside funds or which exhibit a shortfall.
- Maintain non-major maintenance annual program levels.
- Increase annual programs which are "customer service" related and fund new projects or continue programs which relate to public safety.

- Fund preconstruction for new improvements for which no other funds are available.

The pavement and infrastructure management systems, and the major maintenance plan also provide significant inputs to the annual programming process. In addition, a set of street classification guidelines developed as part of the 1984 SCTP are used to guide selection of appropriate improvements and design features at particular locations. These guidelines classify each street according to the nature of traffic, transit, truck, bicycle, and pedestrian movement to be accommodated.

In response to the requirements of the Growth Management Act, the city's Office of Long-Range Planning has initiated the process of developing a comprehensive plan which will establish policies for addressing transportation and land use issues. This effort will provide higher-level mechanisms (beyond zoning codes) for management of growth and establishment of linkages between land use and transportation decisions.

Influence of State Policies and Programs

An estimated 80 percent of Seattle's 1991 capital expenditures for transportation are on "leveraged" projects involving state and Federal funding programs which are restricted for specific purposes or are awarded on a competitive basis. Thus, state funding programs have a major impact on local project selection decisions. The UATA, PWTF, and TIA programs have been responsive to Seattle's infrastructure maintenance and congestion-related needs. However, staff feel that Seattle doesn't get its "fair share" under these programs, given the magnitude of needs and level of tax revenues generated.

While state programs are addressing important local needs, staff feel that increased flexibility in use of state funds would be desirable. Given a higher level of discretionary funds, more would be spent on infrastructure rehabilitation and maintenance, with initial priority to bridges.

Interjurisdictional Coordination

Seattle faces many interjurisdictional transportation problems. For example, major congestion problems occur on the Interstate system. Addressing these problems requires action not only on the part of WSDOT, but also on the part of the suburban jurisdictions where many of the commuters live. Consensus has not been reached on how to address these problems, and some strategies which might be viewed as efficient operational traffic management methods (such as motorist information systems) are not seen as positive from the city's perspective, as they could result in increased diversion of traffic onto city streets. Another controversial issue has been provision of car-ferry service from Vashon Island,

Kitsap County – which results in undesirable levels of traffic and parking on streets in West Seattle, against local policy.

Seattle maintains a close working relationship with WSDOT. Interagency meetings are held on a monthly basis to coordinate ongoing projects. Seattle staff feel that a stronger planning relationship with WSDOT would be beneficial, particularly for issues such as HOV facilities. Substantive participation from the start of a planning effort is believed to be more productive than reviewing and commenting at the end of a project.

A comment was made that while the TIA program provides an effective "carrot" to encourage interjurisdictional projects, it has not addressed mechanisms for coordination of locally initiated projects with WSDOT's programming cycle. A formalized process for consideration and integration of local projects with interjurisdictional features into WSDOT's pipeline is lacking. There is also a perception that WSDOT's programming process – particularly in the programming of Category C funds – is sometimes too rigid to allow for consideration of high priority projects from the local perspective. For example, Seattle identified the need for study of alternatives to address safety problems on the First Avenue South Bridge, which had the highest accident fatality rate in the state. However, the state's priorities on preservation prevented it from being immediately responsive to this need. (Seattle and King County provided funds for a study, and the state has made funds available for design and construction of a new bridge in the 1990 session, with the adoption of transportation tax increases.)

With the Growth Management Act, development of a strong regional planning function will become more critical, providing the framework for interjurisdictional transportation and land use strategies. The Vision 2020 Plan produced by PSCOG is a starting point for such a framework. However, there is considerable uncertainty at the present time as to what form the new MPO/RTPO will take, with the current reorganization of PSCOG, and the need for Metro to address the recent "one-person, one vote" court decision.

■ B.2 Shelton

Context for Highway Programming

Employment, Population and Road Network Characteristics

Shelton is located in the southeastern portion of Mason County, at the junction of Interstate 101 and State Route 3. With approximately 7,200

residents, Shelton is the 45th largest city in the state, and is the smallest of the case study sites. While the population of Shelton has declined slightly over the past decade, Mason County is one of the fastest growing counties in the state. Shelton is the home of Simpson Timber Company, and has historically been a "company town." The decline of the timber industry has resulted in significant local job losses.

Shelton has 68 miles of streets, including 13 miles of arterials and 55 miles of local access streets. Table B.2.1 provides a general description of Shelton's characteristics.

Key Transportation Issues, Needs and Priorities

Maintenance of existing infrastructure is the highest priority in Shelton. Officials estimate that of the 55 miles of local access streets, only ten miles are "in decent shape." Because of insufficient funds for maintenance of paved streets, the city has been forced to convert some of the miles back into gravel. City staff feel that they are moving backwards rather than ahead in terms of road conditions.

While congestion is not generally a problem in Shelton, residential development in suburban areas surrounding the city has caused increases in traffic. Small scale commercial development in recent years has also created the need to upgrade streets to higher standards. Economic development is an important local objective, particularly given the decline in the timber industry. While most of the developable parcels in Shelton have adequate access to the street and highway system, a recent TIA funded project is opening up access to a new development site.

Road Expenditures and Revenue Sources

Table B.2.1 also summarizes expenditures and revenue sources for Shelton's six-year TIP. The six-year budget is $10.7 million, with $673,000 of the costs in the first program year. Federal sources (FAUS) are expected to provide 13 percent of the revenues. State programs (UATA and TIA) will provide another 39 percent of revenues, and the remaining 48 percent will be provided through local sources (primarily the city's gas tax allocation, LID's and private contributions). LID's have historically been used to provide local matching funds for UATA funded projects. Shelton has recently obtained a CERB grant for a project which is also partially funded under the TIA program. PWTF loans have been granted, but for water and sewer rather than road projects.

In 1991, Shelton's road construction budget was $912,000. Maintenance accounted for another $416,000. The total road budget, including construction, maintenance, traffic policing, debt service, and transfers was approximately $2.5 million.

Table B.2.1 Shelton Characteristics

General[1]			
Population	(1990)	7,241	
Population Growth	(1990-80)		(-5%)
Road System[2]			
City Miles	(1990)	68	
Arterial		13	(19%)
Local Access		55	(81%)
State Miles		3	
Transportation Improvement Program	(1991-1996)	$10,744,000	
	(1991)	$673,000	
Six-Year Revenue Sources[3]			
Federal		$1,362,000	(13%)
State (UATA, TIA)		$4,220,000	(39%)
Local (including gas tax)		$5,162,000	(48%)
1990 Road Budget[3]		$2,464,074	
Construction		$912,650	
Maintenance		416,370	
Traffic Policing, other		$470,383	
Debt Service		$65,072	
Transfers		$599,599	

[1] State Office of Financial Management, Forecasting Division August, 1990.

[2] WSDOT Transportation Planning Office.

[3] City of Shelton.

In order to allow for an expanded level of street repair and rehabilitation, Shelton is considering implementation of a street utility tax, as authorized in the 1990 legislative session. As an alternative, the possibility of a $10 million bond issue has also been discussed.

Description of the Programming Process

Program Structure

Shelton's road budget is divided into construction and maintenance categories. Maintenance includes activities such as grading of gravel roads, and pothole repair. There is no ongoing sealing or maintenance overlay program. Budgeting for maintenance is based on historical expenditures. Typically only one to two construction projects are done each year; the six-year TIP includes 16 projects. The city rarely does an arterial construction project with 100 percent local monies, and work on the local access streets is only done where local improvement districts (LID) can be established.

Program Methods and Process

Project needs are identified on an informal basis by the public works staff with input from local officials and the community. Needs on the arterial system are prioritized in the six-year TIP. There is no formal locally-developed project ranking method; the criteria which have been defined by TIB for UATA projects are applied. The list of projects in the six-year TIP is fairly homogeneous. Most involve full or partial road reconstruction, overlays, sidewalks, and drainage work. Some of the projects have safety improvements such as guardrails or shoulder-widening included as well.

The TIP includes one major project which involves construction of a new road, and an overpass and interchange at SR 101. This $5.8 million project is being funded through a combination of eight different sources: TIA, CERB, WSDOT, Mason County, the Shelton School District, the port of Shelton, a private developer, and the city of Shelton.

No prioritization of needs on the local access streets is done, as these are funded 100 percent through LIDs. LIDs are pursued based on development activity, the degree of road improvement need, and degree of property owner support.

If and when new revenue sources are established for funding of local street projects, a prioritization process would be established. Such a process would likely emphasize work on streets which can "still be saved" with relatively minor repairs. A citywide condition survey would have to be conducted to support the prioritization process.

Analysis

Impacts of Local Policy and Plans

There are no formal local policies which drive the street improvement programming process. An action plan for the city of Shelton was developed in 1986, which included a consultant study to identify short-term capital improvement needs. This study inventoried every street, classified them according to broad condition categories (good, satisfactory, fair, poor, bad). Costs for necessary repairs to roads in "poor" and "bad" condition were estimated at $2.5 million. This survey provides a basis for exploration of new revenue sources for streets.

Shelton hired a planner two years ago, who is currently focussing on addressing the requirements of the Growth Management Act. Shelton staff note that considerable work needs to be done to address these requirements at the county level in addition to current efforts in the city.

Influence of State Policies and Programs

The Urban Arterial Trust Account program is the most heavily used state funding program for Shelton. In addition, the existence of the TIA program made the major road construction project discussed above possible. The need for this project had been discussed between the county and the city, and when the TIA program announcement was issued, Shelton staff realized that the project would be eligible. This led to discussions with WSDOT to include an interchange, involvement of property owners, and an application to CERB. While the TIA and CERB programs have clearly been important, it is recognized that future need for projects of this nature are limited. The UATA program is more in line with the city's ongoing need.

City staff hypothesize that if the amount of unrestricted state funds were increased in relation to programmatic funding (UATA), the local programming process would be structured and prioritized differently to reflect local needs. One key difference would be that funds would likely be spread over a larger number of smaller projects rather than concentrated on single large projects. It is difficult for staff to speculate further on how prioritization would be structured, as there hasn't been a recent study of needs or a public process to establish priorities.

Interjurisdictional Coordination

Shelton sends copies of its six-year TIP to the county and other jurisdictions and agencies which may be affected. Coordination with the county has occurred on a few projects, with no major problems. Coordination needs are fairly minor, as there are only six city streets which connect to the county system. The county informs Shelton about chip seals and overlays done on connecting streets, but typically joint projects are not pursued.

There have been two to three projects in the past which have required coordination with WSDOT. This coordination has been for the most part satisfactory. The differences in programming cycles are not seen as a problem from the perspective of preparing the TIP at a different time from the city's fiscal year. However, differences in cycles do present a problem in that there are only limited "windows" of opportunity for local project suggestions to be put into the state's programming pipeline. For example, staff wished to discuss with WSDOT the possibility of improving a traffic signal, but always seemed to catch them in the middle of the programming cycle. A greater level of communication on the part of the district staff to work with local jurisdictions on development and joint prioritization of potential projects would be of value. Information on what the state's priorities are, and the level of funding which might be available for particular projects would help to facilitate joint efforts.

B.3 Redmond

Context for Highway Programming

Employment, Population and Road System Characteristics

Table B.3.1 summarizes Redmond's employment, population, and road characteristics. Redmond is the 14th largest city in Washington, with a 1990 population of 35,800. Between 1960 and 1980, the city experienced explosive growth, with more than a 16-fold population increase (from 1,450 to over 23,000). Annexations during the period between 1955 and 1967 increased the size of the town from 525 acres to 6,440 acres. Between 1980 and 1990, growth continued – both population and employment increased by over 50 percent. These trends are projected to continue over the next decade.

While development in Redmond has been predominantly residential, a considerable amount of office construction has occurred primarily in the form of new business parks outside of the downtown area. Recent growth in employment has been focussed in the high technology and research and development industries. Redmond has two local commercial centers – the downtown area, and the Overlake area, located southeast of state route 520.

Redmond has 100 miles of city streets; 75 percent of which serve local access functions. State routes 908, 520, 901 and 202 provide links to Interstates 405 and 90, and a network of radial arterials connect the City Center with SR 520 and neighboring regional activity centers.

Table B.3.1 Redmond Characteristics

General[1]			
Population	(1990)	35,800	
Land Area	(1990)	14.2	sq. miles
Density	(1990)	2494.4	persons/sq. mile
Employment	(1990)	29,023	
Trends[1]			
Population	(1980-90)	+54.0%	
Population	(1960-80)	+1,504.8%	
Employment	(1983-90)	+57.2%	
Road System[2]			
City Miles	(1990)	100	
Arterial		24	(24%)
Local Access		76	(76%)
State Miles		12	
# Bridges		152	
Road Program[3]	(1991)		
Capital Improvement Program Projects[4]		$12,394,300	
Transportation Improvement Program[5]		8,020,000	
Total - Capital		**$20,414,300**	
Maintenance		**$623,392**	

[1] City of Redmond.

[2] WSDOT Transportation Planning Office.

[3] City of Redmond, Capital Improvement Program 1991-1996.

[4] Street and signal Projects only.

[5] Includes 1991 projects in the 1991-1996 TIP which (1) were not listed in the CIP, and (2) were not carried over into the 1992-97 TIP.

Key Transportation Issues, Needs and Priorities

The major transportation issues in Redmond are dealing with existing congestion problems and managing future increases in traffic associated with continued growth. Both the City Center and the Overlake commercial areas in Redmond experience significant traffic congestion. Arterial routes providing east-west access to and through Redmond are at or near capacity, and there are limitations on adding new capacity due to geographic constraints. Congestion problems on arterials have resulted in spillover traffic onto neighborhood streets.

A significant amount of the traffic in the City Center is pass-through traffic bound for I-405, Bellevue, and other activity centers. There is strong support within Redmond to develop strategies for diverting through traffic around the City Center in order to support a more vibrant, pedestrian-oriented downtown. A recent joint effort between the Redmond Downtown Association and the city of Redmond produced a Strategic Design Program which addresses the objective of a stronger downtown. The program recommends a ring road concept to handle through traffic in conjunction with a number of downtown streetscape changes which would reduce traffic speeds and devote more capacity for bicycle lanes, wider sidewalks, medians, and parking. The ring road concept is currently being studied, and a $2 million program of downtown improvements is planned, including sidewalk widenings, installation of street trees, and lighting.

Addressing traffic impacts of growth and development presents a continuing challenge for Redmond. While the city has utilized the SEPA process to evaluate and mitigate growth impacts of new development, capacity increases have not kept pace with growth. The cumulative impacts of small projects are considerably more difficult to evaluate and mitigate than the impacts of single major projects.

The Transportation System Development Plan of the city's Community Development Guide (CDG) promotes development of a balanced, multimodal transportation system as a way of addressing transportation needs. It puts it in the context of the geographic constraints on road capacity increases, and the desire to discourage through traffic. The plan emphasizes provision for transit, park-and-ride, and bicycle travel modes in addition to the continued development of a grid-based system of arterials.

Road Expenditures and Revenue Sources

Table B.3.2 shows the city's 1991 revenue sources for street improvements.

Table B.3.2 City of Redmond 1991 Revenue Sources

Capital Improvement Program[1]	
Federal	
FAUS, FASP	$112,000
State	
Gas Tax	468,000
TIB	4,030,000
PWTF	1,550,000
	$6,048,000
Local	
General Fund	743,223
Vehicle Registration Fee	231,366
Real Estate Excise Tax	800,000
Interest Revenues	300,000
Developer Contributions	309,000
LID Assessments	1,422,000
Other Jurisdictions	3,598,238
Misc./Special	1,156,440
	$8,560,267
Subtotal	$14,720,267
Beginning Cash	$10,157,066
Total	**$24,877,333**
Transportation Improvement Program[2]	
Federal	
FAUS	258,000
HES	115,000
	373,000
State	
TIB	3,100,000
Gas Tax	322,000
	3,422,000

Table B.3.2 City of Redmond 1991 Revenue Sources (continued)

Local	
Capital Program	6,749,000
LIDs	2,066,000
Developer Contributions	8,485,000
	$17,300,000
Total	**$21,095,000**

[1] The CIP includes facilities and park projects. No separate breakdown of CIP resources or street and signal projects is available.

[2] Figures are taken directly from the 1991-96 TIP, and have not been adjusted to eliminate double-counting with the CIP or to eliminate projects which have been shifted to later years since the 1991-96 TIP was adopted.

Source: City of Redmond.

These include:

- The state gas tax, which provides about $470,000 annually for arterial street improvement projects, and another $600,000 for maintenance;
- The new countywide vehicle registration fee, which provides about $300,000 per year;
- Transportation Improvement Board Programs, both UATA and TIA. The level of funding is variable, but these programs have provided substantial support for Redmond projects; over $4 million in 1991;
- The Public Works Trust Fund, which has approved two Redmond projects for loans totalling over $1.4 million in 1992 and 1993;
- Federal-Aid programs (FAUS and FAS), which provide approximately $112,000 per year;
- The city's general fund, which is expected to provide approximately $1 million per year to capital improvement projects (including streets, public facilities and parks. No separate allocation is made for street improvements).

In addition, local improvement districts (LIDs) and developer contributions are used to fund projects which are designed to benefit a single development project or an isolated set of property owners. In 1992, LIDs and developer funds are expected to total about $1.8 million. In the past, the city has issued bonds to fund major capital improvements. There have been two bond issues in the past five years. In 1986, $20 million in bonds were sold to finance street improvements together with new police facilities, and a senior center. In 1990, a $4.9 bond issue was passed to finance parks.

Redmond's six-year transportation improvement program (TIP) for 1992-1997 includes 83 projects totalling nearly $97 million. Projects in the first two years of the program amount to $33.7 million. Over 50 percent of this $33.7 million two-year program is unfunded. Of the funded portion, TIB programs account for 46 percent of project costs. Funds from other jurisdictions (Metro and Bellevue) account for another 14 percent, and funds from LIDs and developers make up 12 percent. The remaining 28 percent of funds are from the general fund (ten percent), PWTF loans (eight percent), the county vehicle registration fee (four percent), the gas tax (four percent), and Federal programs (two percent).

It should be noted that the actual costs of projects funded each year are typically less than the amounts shown in the six-year program, due to project delays and funding uncertainties. For example, of the 19 projects

slated for 1991 in the 1991-1996 TIP, five (accounting for 25 percent of estimated 1991 costs) were delayed and re-appeared on the 1992-1997 TIP.

Redmond's 1992-1997 TIP is dominated by major roadway capacity improvements. Fourteen major road projects (including one bridge project) account for 88 percent of the costs. Nine of the 29 projects slated for the 1992-1993 period are intersection improvements (including new signals). These projects account for ten percent of the estimated two-year costs. The remaining two percent of the $33.7 million two-year budget is allocated to pedestrian, traffic control, roadway rehabilitation, and other miscellaneous projects.

Description of the Programming Process

Program Structure

Redmond, like most jurisdictions, develops separate budgets for routine maintenance and capital improvements. Road resurfacing projects are included in the maintenance budget. Within capital improvements, three relatively small amounts of gas tax funds are set aside each year for a sidewalk improvement program ($40,000), a neighborhood traffic control program ($20,000), and miscellaneous engineering and construction ($50,000). Remaining funds are programmed on a project-by-project basis. However, separate ranking methods have been developed for five different categories of projects: major street improvements, intersection improvements, street resurfacing, walkways and bikeways, and HOV/Transit.

Program Methods and Process

In June of each year, the city engineering department assembles an updated six-year TIP which lists projects in order of priority, and estimates costs and funding sources for each project. Potential eligibility for Federal, TIB, and PWTF funds is evaluated for each project, and applications are made, where appropriate. The TIP is submitted to the metropolitan planning organization (MPO) in accordance with Federal requirements.

In 1988, Redmond developed a formal rating system for transportation improvement projects. Prior to development of this method, engineering judgement was used to establish priorities. The rating system was devised in order to provide more substantive justification for projects based on objective criteria.

Eleven different criteria were developed for project evaluation. These criteria are:

- Safety (roadway deficiencies, geometrics, accident rates);
- Design standards met (curbs, gutters, drainage, sidewalks, illumination, bike lanes, shoulder and lane widths);
- Traffic (delays, volumes, level of service, satisfaction of signal warrants);
- Pavement condition rating (from the pavement management system, based on visual distress data);
- Circulation (improved traffic circulation, route continuity, consistency with current and planned connecting roadways in other jurisdictions);
- Functional class;
- Bicycle and pedestrian;
- Cost and benefit (qualitative assessment of relative benefit for the cost, and the estimated cost of the improvement per person-trip accommodated);
- Public interest (legal mandates, citizen support);
- Use benefits (service provided, convenience, relationships with other jurisdictions, mitigation of disruption, risk and damage in project design and operation); and
- Environmental impacts (noise, air, water, aesthetic).

Five different classifications of projects were defined:

- Major street improvement
- Intersection improvement
- Street resurfacing
- Walkways and bikeways
- HOV and transit

For each type of project, different ranges of potential points were assigned to each of the 11 criteria. To allow for project comparisons, the maximum number of points assigned to all types of projects is 100. An example rating form which shows the distribution of points by criteria for the different project types is shown in Table B.3.3.

Table B.3.3 City of Redmond TIP Evaluation Criteria

	Major Street Improvement	Intersection Improvement	Street Resurfacing	Walkways/ Bikeways	H.O.V. / Transit
1. **Safety**					
a. Roadway deficiencies	1 to 5	1 to 5	1 to 5	N/A	N/A
b. Geometrics	1 to 5	11 to 10	N/A	N/A	N/A
c. Accident data	1 to 5	1 to 10	N/A	1 to 10	N/A
2. **Design Standards Met**	1 to 10	1 to 5	N/A	1 to 10	1 to 10
3. **Traffic**					
a. Delays	N/A	1 to 5	N/A	N/A	1 to 10
b. Volume	1 to 5	1 to 10	1 to 10	1 to 5	1 to 10
c. Level of Service	1 to 5	1 to 10	N/A	N/A	1 to 10
d. Warrant Satisfaction	N/A	1 to 10	N/A	N/A	1 to 5
4. **Pavement Condition Rating (RPM)**	1 to 5	N/A	1 to 50	N/A	N/A
5. **Circulation**					
a. Areawide Circulation	1 to 5	N/A	N/A	1 to 5	1 to 5
b. Route Continuity	1 to 5	N/A	N/A	1 to 5	1 to 10
6. **Functional Class**	1 to 5	1 to 5	1 to 10	1 to 5	1 to 5
7. **Bicycle and Pedestrian**					
a. Pedestrians	1 to 5	1 to 5	N/A	1 to 10	N/A
b. Bicycles	1 to 5	N/A	N/A	1 to 10	N/A
8. **Cost and Benefit**					
a. Relative Benefit	1 to 5	1 to 5	1 to 5	1 to 10	1 to 10
b. Cost per Person/Trip	N/A	N/A	N/A	N/A	1 to 5
9. **Public Interest**	1 to 10	1 to 10	1 to 10	1 to 10	1 to 10
10. **Use Benefits**	1 to 10	1 to 10	1 to 10	1 to 10	1 to 10
11. **Environmental Impacts**					
a. Physical	1 to 5	N/A	N/A	1 to 5	1 to 5
b. Aesthetic	1 to 5	N/A	N/A	1 to 5	N/A
Totals	**max 100**	**max 100**	**max 100**	**max 100**	**max 100**

Source: City of Redmond.

For major road improvement projects, points are fairly evenly distributed across the 11 criteria, with safety assigned a maximum of 15; cost-benefit and functional class assigned a maximum of five; and the remaining criteria assigned a maximum for ten points each. With this scoring method, two projects with the same score might have very different characteristics, which is acceptable given that major road improvements are designed to address a mix of objectives. For intersection improvements, safety and traffic criteria account for 60 out of 100 points, reflecting the narrower focus of this type of project. For resurfacing projects, 50 of 100 points are assigned based on the pavement condition rating, with another 25 assigned to the combination of traffic, functional class, and safety criteria. The distribution of points for walkway and bikeway projects is similar to that of major roadway improvements, except that more emphasis in placed on the bicycle and pedestrian criterion. For HOV and transit strategies, traffic and circulation criteria receive 50 of the possible 100 points.

Even though a rating method was defined for resurfacing projects, these are not currently part of the TIP, but funded under a separate maintenance budget. Redmond uses a microcomputer version of WSDOT's pavement management system to develop a list of pavement segments to be resurfaced each year. Using the PMS, it was estimated that $500,000 per year would be required to meet resurfacing needs. However, only $300,000 per year has been made available.

Using the point system described above, a score is calculated for each project in the TIP. Points are used as a primary factor in establishing each project's priority ranking in the program. Establishing the priority rank for the TIP is not a mechanical process of ordering projects by score – if one examines the TIP, there are a number of instances of projects which are ranked high on the list, but have scores which are lower than other projects which are ranked lower. However, projects with high scores tend to appear in the earlier years of the program, and projects with low scores tend to appear later.

While the scoring method was devised to allow for project comparisons, the priority ranking in the 1992-1997 TIP indicates that a major roadway improvement with a score of 50 is not directly compared to an intersection improvement with a score of 50. Intersection improvements tended to score lower than major roadway improvements, but this did not result in assigning lower priorities to these projects. The number of points earned by projects within a single category affects the ordering of these projects in the TIP, but the point system does not appear to be used to establish the relative priority of projects in different categories. This is done in a non-quantitative manner.

Manual adjustments to TIP rankings are made based on availability of funds, and assessments of project phase scheduling. Coordination with

development projects is also a major consideration for some improvements.

Some adjustments to the priority ranking are also made as a result of the TIP review process involving the mayor, the city council, and the public. However, these adjustments are typically fairly minor.

The TIP is reviewed by an internal technical committee which also reviews development proposals. In this way, coordination of development and transportation strategies is ensured.

Once the TIP is finalized, projects which are slated to be funded from city general funds or the one-half cent gas tax are identified and evaluated as part of the city's capital improvement program (CIP) process.

The TIP is reviewed by an interdepartmental committee which examines all facility and infrastructure needs which require general funds. Based on the recommendations of this committee, a citywide CIP is developed. The CIP was recently expanded to include a six-year timeframe in order to be consistent with the TIP. The CIP is then reviewed by the mayor and the city council, and is presented in public meetings. The final CIP is formally adopted by city council resolution in November.

The first year project list in the TIP provides a reasonably accurate idea of which projects will actually get done. As previously noted, it is estimated that about 75 percent of projects (and total project costs) programmed in the first year of the 1991-1996 TIP were, in fact, initiated in 1991.

Considerable shifting occurs among projects in later years of the program. Of the 14 projects slated for 1992 in the 1991-1996 TIP, only three were listed for 1992 in the 1992-1997 TIP; the remaining projects were shifted to 1993 and 1994. These shifts can be attributed to a lack of available funding. Projects which tend to get done are those for which TIB or Federal funds are available. Highly ranked projects which are modest in size ($50,000 or less) and can be funded out of the one-half cent gas tax also tend to move faster than others.

Difficulties in predicting funding availability limit the ability of the TIP to provide a realistic picture of improvements which will be accomplished over more than one or two years. Uncertainties apply both to state funding programs, such as the Transportation Improvement Board (TIB) and local sources, including the CIP, developer contributions, and LIDs. Projects for which developer contributions are anticipated tend to be particularly subject to significant delays due to uncertainties in negotiation processes, and in the progress of the development projects themselves.

Analysis

Impacts of Local Policy and Plans

Redmond has established a number of policies and plans which serve to guide the identification and prioritization of transportation improvements. Transportation policies and plans are codified in the Community Development Guide. In addition, specialized planning efforts have produced short and long-range strategies for specific portions of the city. The downtown strategic design plan presents a set of guidelines for transforming the downtown into more of a "central place," and includes a number of street improvements. Implementation of downtown improvements is a high priority objective at the present time. Redmond has also participated in planning efforts with other jurisdictions – most notably, the Eastside Transportation Program. Projects which have been developed through such planning efforts tend to receive a high priority in Redmond's programming process.

Redmond's Community Development Guide includes a goal of establishing an "equitable system of identifying and financing necessary transportation improvements." Four policies are listed under this goal:

- Develop and implement a transportation improvement program (TIP) prioritization system.
- Finance major circulation elements by methods that fairly distribute the costs between private property owners and the public sector.
- Establish and implement a transportation mitigation funding system that is collected on a pro-rata basis from all new development. This system should include a variety of incentives to reward developments for significant contributions to maintaining the operation of the arterial system.
- Work with other area jurisdictions to develop a funding base to support transportation projects of mutual benefit.

Thus, the use of prioritization methods is adopted city policy, and the policy allows for flexibility in how priorities should be set and what methods are to be used. City policy also stresses the use of private sector and interjurisdictional funding arrangements.

Redmond has adopted a transportation plan which provides a sound basis for identification and design of street improvements. The plan includes a designation of streets by functional classification. For each arterial, standards for the number of lanes, sidewalks, and bike lanes are set. A minimum level of service standard of D (volume/capacity = .9) is also specified in the plan.

Neighborhood street plans have also been developed which designate planned and proposed streets. These plans are used as a basis for evaluating development proposals. For example, the Willows Neighborhood plan designates five different improvements and requires that development approvals be conditional on accomplishment of these improvements. The extent of required improvements depends on the location and size of the proposed development.

The transportation system plan emphasizes demand management strategies such as flextime and ridesharing, and encourages development of public transportation services, and support for HOVs, including the establishment of a transit station in the City Center and provision of HOV priority at intersections on designated multimodal transportation corridors. The plan also includes a number of strategies for improving the pedestrian environment and providing for bicycles. A bicycle plan has been adopted which identifies bikeways, bicycle lanes, and bicycle routes (along with design standards for each).

Policies emphasizing provisions for pedestrians and bicyclists are reflected in the TIP priority criteria – points are assigned for meeting design standards (which include bike lane and sidewalk provisions for certain designated routes) and for bicycle and pedestrian benefits. HOV projects are ranked under a separate category from major street improvements, and there are no formalized criteria for making trade-offs between HOV projects and street improvement projects.

Influence of State Policies and Programs

The state's requirements for arterial transportation improvement programs have clearly had an influence on Redmond's TIP and CIP development process. However, there is also considerable support on the part of local policy makers for use of prioritization methods, and it is likely that current methods would remain in use even if state requirements were changed.

Availability of state and Federal funds for projects is an important determinant of which projects are implemented. The state's TIB (formerly UAB) administered programs have provided a major source of funds for projects in Redmond. Twenty arterial projects have been supported through these programs. Redmond was the first jurisdiction in the Puget Sound region to begin construction on a TIA project.

Criteria in both the UATA and TIA programs are very much in line with Redmond's needs and local transportation policies (addressing arterial congestion problems, and pursuing multi-jurisdictional and multimodal solutions), and the city has had a number of projects which have been highly ranked according to program criteria. The first TIA project, the 148th Avenue N.E. extension from SR 901 to Willows Road, is part of a

strategy to provide a North City Center Bypass system which will allow for diversion of commuter traffic from downtown streets. This is an example of a project which not only relieves arterial congestion problems, but has the added benefit of supporting local policies regarding the downtown.

While state programs have provided funds for projects considered to be a high priority from Redmond's local perspective, there are cases where the availability of matching funds for particular types of projects results in a different distribution of local discretionary funds than would occur in the absence of matching funds. For example, local officials commented that although the Overlake Access project (which is slated to receive TIA funds) will address serious congestion problems, the city council would probably have chosen to allocate local funds to the downtown before allocating money to the Overlake area. However, the existence of TIB funds as well as participation from WSDOT and Bellevue for the Overlake project outweighs the local policy emphasis on downtown Redmond.

Interjurisdictional Coordination

Redmond also faces many interjurisdictional transportation problems. These require coordinated approaches to be successfully addressed. The city recognizes this fact in its policies, and it has participated in several interjurisdictional planning efforts over the past decade.

The most comprehensive interjurisdictional effort was the Eastside Transportation Program (ETP), which involved the cities of Redmond, Bellevue, Bothell, Kirkland, and Issaquah; WSDOT; King County; Snohomish County and Community Transit; the Puget Sound Council of Governments (PSCOG); and local business community representatives. The ETP produced a comprehensive set of policies, programs, and projects to address explosive growth in the area, and the increasing pattern of suburb-to-suburb rather than radial trip making. Recommendations included HOV lanes, park-and-ride facilities, additional transit service, and completion of the road network. Several of the ETP's recommended projects within Redmond are already underway or programmed, including the 148th Ave N.E. extension, the SR 901 extension, and the Leary Way widening and HOV project which will provide access to the planned Metro transit center from the planned HOV lane on SR 520.

Another interjurisdictional effort was aimed at addressing traffic congestion problems in the Overlake and Southeast Redmond area. In this effort, Redmond worked together with Bellevue and WSDOT to develop a prioritized list of street improvements for the area, along with an implementation timeframe. One major project which came out of this effort involves improving traffic circulation and access to SR 520 from the Overlake area. This $12 million project includes a new crossing over SR 520, a new exit ramp which will provide access to a Metro Park and

Ride lot, and two new arterial links. The project will be funded jointly by Redmond, Bellevue, WSDOT, and TIB.

In addition to these formal planning efforts, Redmond routinely sends copies of the CIP to surrounding jurisdictions for their comments.

No major problems were reported in coordinating projects with WSDOT; Redmond has a good working relationship with District 1. City staff have perceived a positive shift in WSDOT's efforts to be a "team player" in inter-jurisdictional efforts. Differences in state and local programming cycles do not present a problem.

B.4 Spokane

Context for Highway Programming

Employment, Population, and Road Network Characteristics

The Spokane metropolitan area boundary (urban area) encompasses approximately 275 square miles of land, extending from the Little Spokane River on the north to South Moran Prairie on the the south and from Espanola Road west of Fairchild Air Force Base on the west to the Washington-Idaho boundary on the east. This area includes the incorporated cities of Spokane, Millwood, and Airway Heights.

Table B.4.1 shows that the population of Spokane in 1980 was 171,300 and that the 1990 population grew to 177,196, a three percent increase.

The major industry in Spokane is the service industry (Table B.4.2), of which the health sector, with 14,804 employees and 651 employers, is particularly strong. This is distantly followed by business services (4,020 employees) and social services (2,140 employees). There are a total of 8,507 firms in Spokane employing 136,216 people.

Land use in Spokane was described in 1980 as consisting of 10,638 acres of residential use, 1,035 acres of commercial use, and 966 acres of industrial use, as shown in Table B.4.3. By the year 2000 land use is projected to increase by over two thousand acres in the residential category, almost four hundred acres in the commercial category, and over two hundred acres in the industrial category, for a net increase of 2,761 acres.

Table B.4.4 describes the city's roads by functional class. The city has 278 miles of arterials and 486 miles of residential roads. In addition, there are over a hundred miles of gravel or dirt roads, primarily in low income

Table B.4.1 City of Spokane Population Description

Year	Population	1980-1990 Percent Change
1980	171,300	-
1990	177,196	3%

Source: Office of Financial Management, Forecasting Division, June 28, 1991.

Table B.4.2 City of Spokane Employment Base by Industry, 1988

Industry	No. of Firms	No. of Employees
Agriculture	151	803
Mining	34	357
Construction	1,033	5,808
Manufacturing	504	18,776
Transp. and Public Util.	284	6,402
Wholesale Trade	709	10,112
Retail Trade	1,790	28,472
Fin., Ins., Real Estate	805	7,797
Services	8,307	113,407
Government	200	22,809
Total	**13,817**	**208,935**

Source: Washington State Office ESD, Employment and Payrolls in Washington.

Table B.4.3 City of Spokane Land Use, 1980-2000 (in acres)*

Land Use Category	1980	2000	Net Increase
Residential	10,638	12,800	+2,162
Commercial	1,035	1,400	+365
Industrial	966	1,200	+234

* In net acres. Does not include public land, vacant land, or right-of-way.

Source: City of Spokane Arterial Street Plan, 1986.

Table B.4.4 City of Spokane City Miles by Functional Class, 1990

Functional Class	Streets
Arterials	
Principal	120
Minor	86
Collector	72
Total Arterials	**278**
Residential (Paved)	486
Graded (Gravel)	46
Unimproved (Dirt)	57
Total Streets	**867**
	Alleys
Paved	71
Unimproved	113
Total Alleys	**184**
Total Miles of Streets and Alleys:	**1,051**

Source: Department of Public Works, City of Spokane.

areas. Alleys comprise another 184 miles of road, only 71 of which are paved. The city had a total of 1,051 miles of roads and alleys for 1990.

Table B.4.5 details the city's VMT by functional class of road.

Key Transportation Issues, Needs, and Priorities

The key transportation issue for the city is economic development, as well as maintenance of its transportation system. Economic development started to pick up in Spokane in 1988, and has continued for the last two years. Some of the impetus for this development is new businesses moving into the city, but it is also the expansion of existing businesses where most of the new jobs are being created. Spokane traditionally hasn't had the extreme boom-and-bust cycles of other jurisdictions. Part of the insulation from the boom-and-bust cycle has been because of the location of a medical center in Spokane consisting of five hospitals. This has protected the city from total dependence on mining, lumber, and agriculture; industries that are more vulnerable to economic downturns.

This recent economic development has affected the city in two ways: it is creating a spin-off in terms of service jobs, and it is also creating increased trip generation on city streets. In addition to economic development, then, funding for maintenance and preservation is also an issue. The city has 30 to 40 year old streets, primarily residential and minor arterials that need to be redone, but it cannot fund these projects. In addition, the city has over 100 miles of unpaved streets. According to city officials, this stems from past years' policies of paving residential streets under the local improvement district (LID) process, the theory being that the people who benefit from a paved road should pay for it. This has resulted in the low-income parts of the city having the majority of unpaved roads that the city cannot now afford to resurface.

City officials spoke of a policy dichotomy that exists in terms of wanting to attract new people, growth, and development, and the pressure and resources which emphasize the maintenance of the existing transportation system. Although Spokane is not yet developed to the point that this has reached a critical stage, recent increases in traffic congestion and building permit issuances have alerted city officials to the importance of resolving these policy issues in the near future.

Road Expenditures and Revenue Sources

As described in the city's 1991-1996 Six-Year Comprehensive Street Program, local funding is derived from a number of sources. The only major funding sources for the construction of new residential streets and alleys is the use of the local improvement district (LID) bonds. These

Table B.4.5 City of Spokane VMT by Functional Class of Road

	Urban				
	Principal Arterial	Minor Arterial	Collector[1]	Local[2]	Totals
Road Miles	82	78	44	607	**811**
Lane-Miles	268	169	100	1,248	**1,785**
VMT (100s)	10,204	3,863	2,233	4,821	**21,121**

(1) Urban Collector = Nonresidential and Residential

(2) Urban Local = Commercial/Industrial and Residential

Source: Wilbur Smith

bonds are financed through direct property assessment and, in recent years, it has been difficult to get property owner's approval. Federal community development funds are used to supplement low income property owner assessments.

The city can also issue general obligation (GO) bonds. In November of 1987, the city issued a ten year bond to refinance a $15 million street resurfacing program. This program is spanning a five year period (1988 through 1992), and is composed of two separate program efforts. The Residential Resurfacing Program's budget is estimated at $10 million, which will resurface approximately 111 miles of residential streets. The Arterial Street Resurfacing Program is estimated at $9 million. A total of $5 million is supported by the bond. The remaining $4 million is being funded through the city's state and Federal gas tax allocation. This program is resurfacing approximately 49 miles of arterial streets.

Of the total state gas tax received, a portion supports the maintenance of city streets. This portion of the fuel tax is called the Street Maintenance Fund. Street maintenance includes street cleaning, leaf pickup, snow plowing, and street repair (potholes, cracks, patching). The remaining funds are used for arterial street improvements. This is called the Arterial Street Fund. For 1991 the projected total to be received from the state gas tax was $4,660,000: $2.7 million to the Street Maintenance Fund, and $1.96 million to the Arterial Street Fund. The city also applies for and receives funds from UATA, TIA, and PWTF.

Federal funding is obtained from four sources through fuel tax allocations: Federal-Aid Urban System (FAUS), the Railway-Highway Grade Crossing Program (RRP), the Hazard Elimination Program (HES), and the Highway Bridge Replacement and Rehabilitation Program (HBRRP). For 1991, the FAUS funds available for projects was projected to be $664,836, with the other Federal funds distributed on a needs basis.

City officials realize that since the Legislature has authorized local option taxes, the city's argument that declining gas tax revenue should be bolstered by new state money has been weakened. Although the city is planning to explore the viability of local option taxes for Spokane, no city official believes that this will be easily authorized or implemented. For example, the county has a property tax of $11 per month for streets. (The rate varies depending on the value of the residence. Eleven dollars is based on a $70,000 house.) In the city, on the other hand, people are concerned about forming a street utility for only $2 per month. In addition, city officials believe that with the focus of gas tax funds on maintenance, the city will have an increasingly difficult task to meet its capital needs.

Table B.4.6 shows the city street funding budget (not including state funds other than gas tax, or LID bonds) for 1991. The city received $7.3 million in revenue, most of which came from the state gas tax ($4.7 million). In the expenditure category, roadway maintenance, consisting of skimcoating, patching and grading is the largest item, followed by the matching fund reserve of $1,400,000, and snow and ice control and cleaning at $1,100,000 each. Finally, the city budgeted $400,000 on minor bridge repairs, and $600,000 for resurfacing work during 1991. City officials have also developed an additional category called "Annual Average Shortfall," which consists of cleaning, bridge repairs, maintenance, resurfacing (arterial streets every 15 years, and residential streets every 30 years), and capital needs. This shortfall is based on the city's historical practice (cleaning), and its PMS (resurfacing and capital needs), and totals $9.5 million. The city doesn't have enough money to match all the bridge replacement needs. In this case, city officials apply for Public Works Trust Fund (PWTF) loans. The amount reflected as the annual average shortfall for bridge replacements is the amount of money the city needs to use as a match in order to avoid losing PWTF money.

Needs projects in the city's six-year plan are defined by program, such as street maintenance, resurfacing, and construction, improvement and repair, with separate sections for UATA, TIA, and PWTF funds. Within each program category, needs projects are listed in priority order, with costs estimates for engineering and administrative costs, rights-of-way, and construction. The plan describes projected funding for all projects, including those funded by the gas tax. In addition, each program category includes groups of needs projects for which funding is not currently known. City officials have calculated a total of approximately $20-$25 million in unfunded projects.

Description of the Programming Process

Program Structure

The city's programming process is not separate for state, Federal, or local funding sources, nor are the city's program categories analogous to the state's A, B, C, and H. The city has two major categories, preservation and improvements, with preservation most important. However, city officials also say that with the current funding system, the city will spend what it gets, regardless of what program category it is in.

Needs projects are developed for the six-year plan and listed in priority order from 1 to 154. Projects are grouped according to anticipated funding sources with priority rank meaningful within program categories. This means that projects listed as 1 through 37 are in the construction, improvement and repair category, with funding from the gas tax or FAUS; the Bridge Replacement Program consists of projects from 38 to 47, with

Table B.4.6 City of Spokane 1991 Street Funding*

	Purpose	Amount
Revenue Source		
General Fund	Maintenance	$2,000,000
State Gas Tax	Maintenance	3,300,000
	Capital Projects (includes resurfacing)	1,400,000
FAUS	Capital Projects (includes resurfacing)	600,000
Total Annual Revenue		$7,300,000
Expenditure Category		
Roadway Maintenance (includes skimcoating of less than 1", overlay patching, grading)		$2,700,000
Roadway Cleaning (arterials 2x/yr., residential 1x/yr.)		1,100,000
Minor Bridge Maintenance		400,000
Snow and Ice Control		1,100,000
Resurfacing		600,000
Matching money (for grants for capital projects. Source: state gas tax)		1,400,000
Total Expenditures		**$7,300,000**
Annual Average Shortfall		
Cleaning		$800,000
Bridge Maintenance and Replacement		200,000
Maintenance and Replacement of Signal Controls		100,000
Resurfacing		3,400,000
Current Capital Needs		5,000,000
Total Shortfall		**$9,500,000**

* Does not include state funds other than gas tax, or L.I.D. bonds.

Source: City of Spokane Department of Public Works.

funding from gas tax, FAUS, HBRRP, and PWTF; construction, improvement and repair (traffic operations improvement) consists of projects from 48 to 60 funded by gas tax and FHES; the construction, improvement, and repair (general street program) consists of projects from 61 to 63, funded by gas tax, LID, and community development funds; the arterial resurfacing program consists of projects from 64 to 121 funded by gas tax and FAUS; the TIB program consists of project from 122 to 154, with anticipated funding from the UATA, TIA, and gas tax. The first project in this category, number 122, is also the priority project in this category. PWTF and the bikeway development program (funding from the trails and paths reserve and gas tax) lists each set of projects discretely. Approximately half of these projects are unfunded, according to city officials.

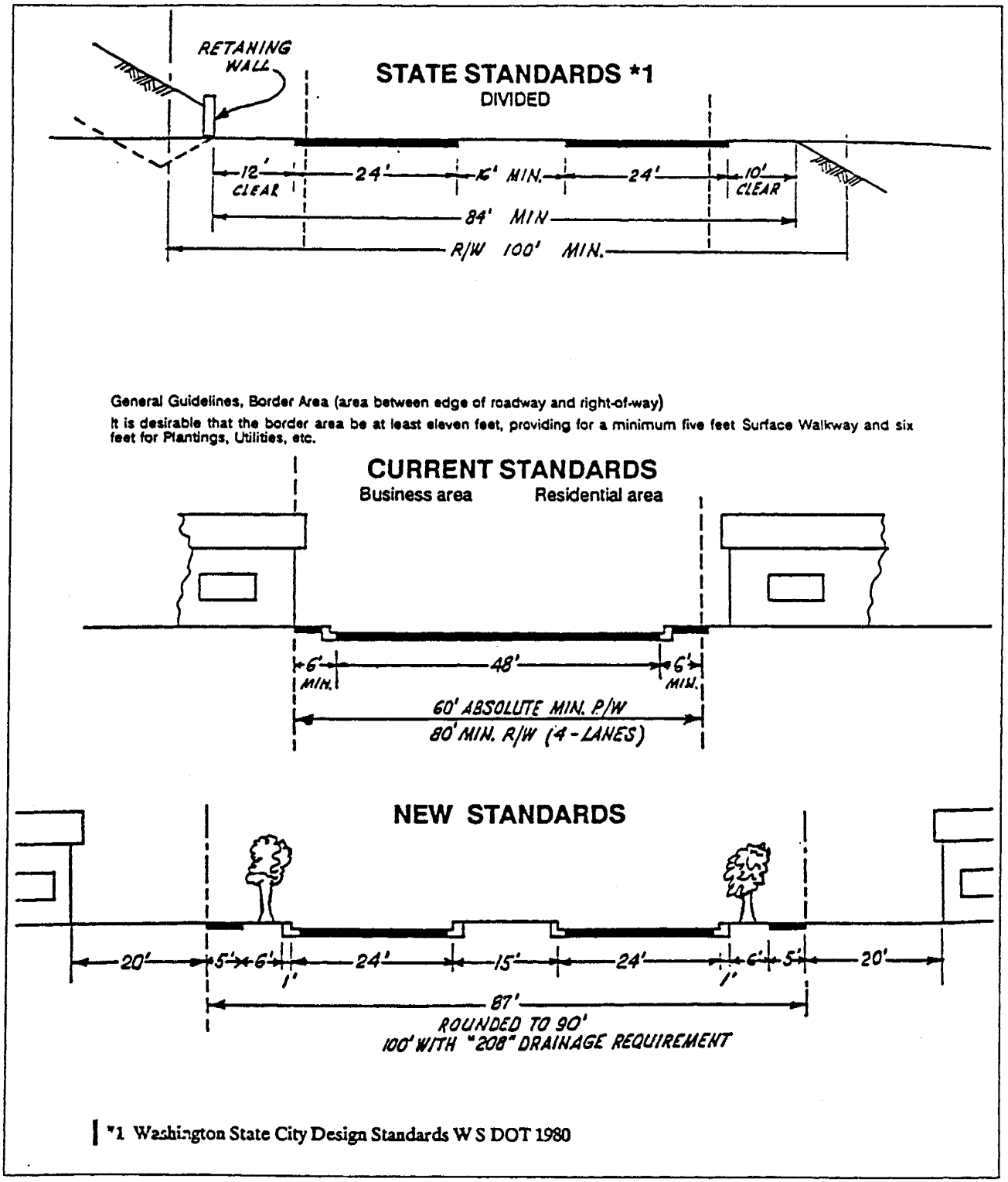
Programming Methods and Process

The city uses the state's pavement management system to identify pavement-related improvement needs. City streets have been divided into segments, and each segment has been assigned a deterioration curve. Pavement deterioration is tabulated, and points are deducted for various signs of failure. Factors considered and assigned negative values include: corrugations, waves, sags, humps, alligator cracking, raveling or flushing, longitudinal cracking, transverse cracking, and patching. When the pavement deterioration curve reaches the trigger value for resurfacing or rehabilitation, the segment is scheduled for repair. The minimum pavement condition rating values range from 1 to 100. The standard action curve ranges from a rating of one to five, which indicates reconstruction, 6 to 35, which indicates rehabilitation, 36 to 45, which indicates resurfacing, 46 to 80, indicates routine maintenance, and 81 to 100, which indicates that pavement is in good condition and requires no action.

The bulk of the city's effort goes into roadway maintenance and resurfacing. Residential resurfacing entails first repairing the existing pavement and subgrade level, if needed. Next the surface is cleaned and made ready for an asphalt overlay. This includes an application of a tack coat, which causes the new overlay to adhere to the existing surface. The new overlay lift is then applied and compacted to a thickness of one and a half inch, minimum.

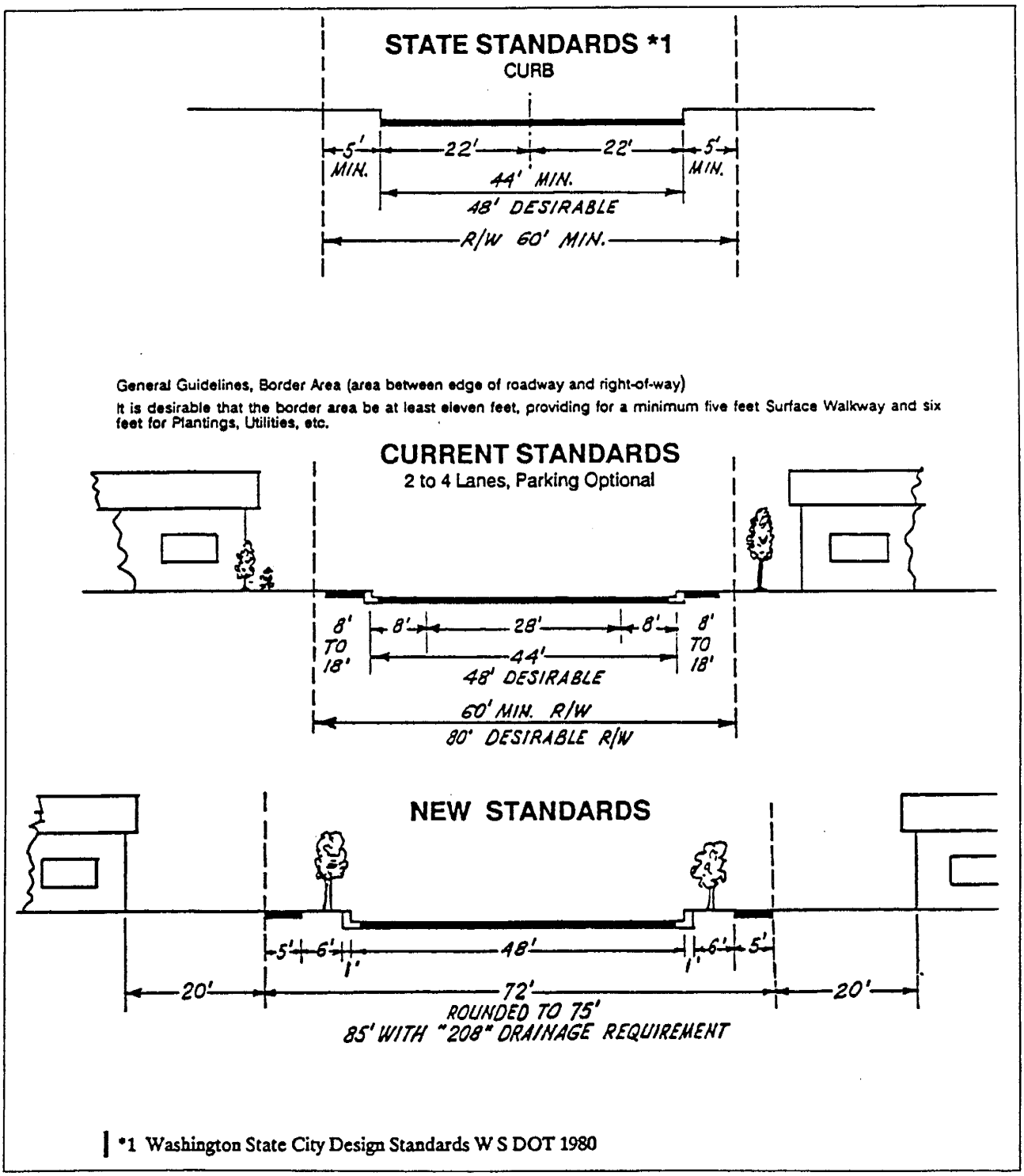
Arterial street resurfacing also requires repair of the existing pavement and subgrade. Following this, the surface may be removed in part, by mechanical grinding, to provide space for the new overlay material. The decision to remove existing surface material depends on the physical dimensions of the cross section. Standard practice has been to maintain a minimum of three inch vertical clearance between the top of the curb and gutter. Usually many of the arterials have a reduced curb clearance due to previous overlay projects, and most new resurfacing projects require

Figure B.4.1 Principal Arterial



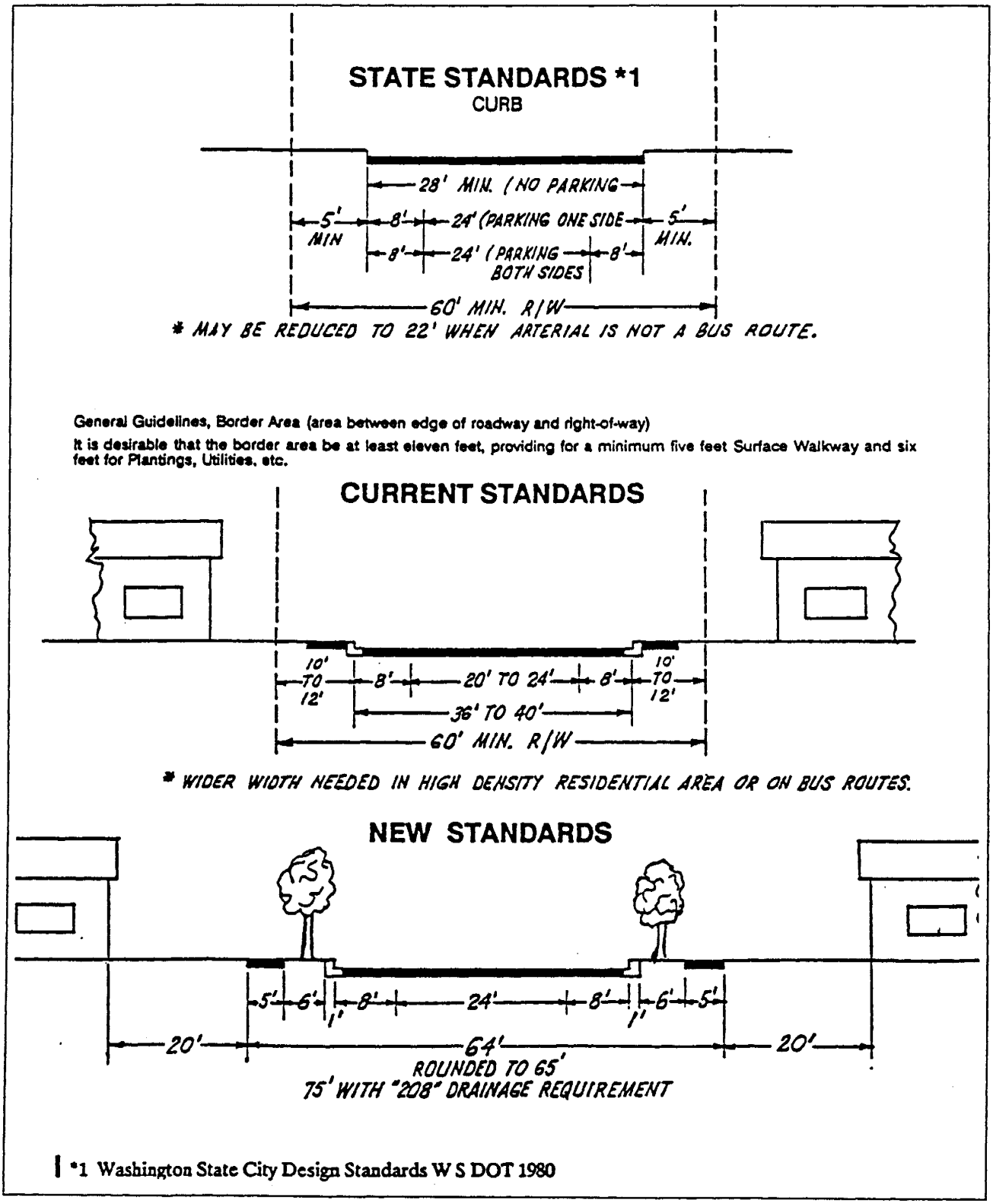
*1 Washington State City Design Standards W S DOT 1980

Figure B.4.2 Minor Arterial



*1 Washington State City Design Standards W S DOT 1980

Figure B.4.3 Collector Arterial



*1 Washington State City Design Standards W S DOT 1980

grinding. After grinding, the surface is cleaned and a tack coat is applied. The overly lift is then placed and compacted to a depth of one and a half inches.

The 1986 City Arterial Street Plan contains a definition of the design standards used by the city. In 1980, WSDOT published the Washington State City Design Standards for all major classifications of arterial streets. The publication was intended to be used as a guide to help standardize similar arterials among all the cities. Figures B.4.1, B.4.2, and B.4.3 show a comparison of the state standard, the city's 1966 Arterial Plan standard, and the updated (1986) Arterial Street Plan standards. The figures present comparisons for principal, minor, and collector arterials.

The city follows a programming process similar to the county. That is, city officials use the UATA and TIA formula calculations to develop the priority projects, which will then get submitted for state consideration. For each, the city submits the projects which it estimates stand the best chance of getting funded. These may or may not be the top projects developed by the priority formula. In this way too, the city and the county are similar in that they use the priority formulas to develop their needs list, and then select the projects which stand the best chance of funding as their "funding" list.

City officials are still learning how to best program TIB projects. This is because its emphasis on a private development match presents difficulties for the city. Officials have found that private developers usually work with a much shorter timeframe than do city or state funding agencies, so trying to program such projects into the priority rating has been difficult for them.

Growth management and city charter requirements stipulate that the city planning commission certify the city's six-year plan and other policy documents, such as the Arterial Street Plan, for consistency. Engineering and planning staff coordinate the development of these documents at the staff level, before they get submitted to the planning commission. Other departments which review the documents are traffic, water and sewer, and parks. After they get certified by the planning commission, they then get submitted to the city council. Upon passage here, policy documents are sent to the SRC for inclusion in the TIP, although engineering and planning staffs have been informally coordinating with the SRC throughout the process.

Analysis

Impacts of Local Policies and Plans

The Spokane Regional Conference (SRC) was created in 1966, to coordinate the planning activities of local governments in Spokane County. The first coordinated land use plan was prepared in 1967, with the SRC responsible for the process of combining city and county transportation elements. In addition, the city's six-year plan is based on the Arterial Street Plan and the city's most recent land use plan, which was accepted by the city in 1983.

The Arterial Street Plan is the city's "prescription" for arterial street development over the next 20 to 30 years. Plan policies focus on long- and short-range improvements and the establishment of minimum standards for various arterial classifications. One of the most important impacts of local policies is the development of a major limited access arterial in the northeast quadrant of the city as an important element of the long-range plan. Secondly, the long-range plan calls for expansion of all arterial rights-of-way beyond the typical 60 feet. The short-range plan relies on the six-year plan for yearly updating and the development of arterial project priorities.

Influence of State Policies and Programs

City officials believe that the UATA funds do address an important portion of local needs, as well as resulting in a fairly accurate portrayal of the city's needs priorities, with the same exception as the county, of the city's gravel and dirt roads.

One of the difficulties of the process for city officials, however, is the uncertainty about which projects will get funded in any given year. The city submits its projects every year and programs its matching funds in case any of the priority projects does get accepted by the state for funding. If they are not accepted, then they go through the same process in the following year. Not only do city officials not know which projects will get funded, they feel that it is very difficult to do any real programming with such a competitive funding process. City officials would prefer to see programming as something that is definitely going to be done within a given timeframe; not knowing when the funds will come in means that it is more of a "hit-or-miss proposition."

City planning officials, in particular, believe that this is not the best way to do capital programming. Rather, a minimum floor of guaranteed resources would be more appropriate, "The idea of competing on an annual basis fosters this notion of shotgun programming, and not knowing whether your most urgent projects are going to rise to the top of the state's list, or whether it is a secondary project in terms of the city's needs, is simply not responsive (to capital programming)."

This uncertainty also results in the underestimation of project costs. City officials are aware that TIB is concerned because once a project has been approved for funding, the city will sometimes come back to TIB with a request for more money. From the city's point of view, they do the best they can to estimate costs for projects on the priority needs list. Once a project gets approved for funding, city officials then spend the time and money on detailing exact costs. Another factor in project cost underestimation, is the timeframe of the state funding process, since the construction dollar can be affected over a single biennium because of inflation, and this problem is compounded over a six-year period. To the city, this means that the funding award for a project can be worth less than the cost of the project adjusted for inflation.

Another concern of city officials, particularly with TIB, is that the jurisdictions which have the largest local contributions are the ones that tend to get funded. To the city of Spokane, this means that the counties and cities operating under growth management constraints, with local excise tax commitments, will be able to provide more of a local contribution than jurisdictions not included under the growth management umbrella, such as Spokane. This means that the counties in eastern Washington which are not under growth management and can't take advantage of the excise tax and offer the same level of local contribution will never be as competitive as other areas of the state.

The scheduling of the state's programming process has also presented some difficulties for the city. If the city receives funding on July 1, the project designated for construction during that construction season must be postponed until the following season. This sometimes presents the city with problems. Also, the city's construction season is not a full year, and city officials feel that it is sometimes difficult to get commitments and agreements worked out with the state for the city to take advantage of its construction cycle. Because the city's fiscal year is the calendar year, they are finished with the construction season by the fall, and have time to prepare for the following season. City officials say that there are very few projects which they can complete in the last quarter of a biennium.

City officials believe that the city's programming process would be similar even if there were no requirement for a six-year plan; nor would the priority formula calculations which result in the needs list change. The difference would be in the order in which priority projects are pursued. As far as the city is concerned, the six-year plan is not a wish list, but a list of unmet needs which stay the same whether or not funding can be identified for those projects.

On the whole, city officials like the concept behind TIB, particularly the requirements for increased local coordination. Some city officials think that this has not worked very well in the past, but that it has gotten better

in the last few years, and will continue to do so with the requirements for growth management, and because of TIB.

It is hoped that a closer coordination between state and local agencies might result in a more equitable distribution of resources. For instance, there is very little coordination between the Spokane Transit Authority and the city. Yet, in the opinion of city officials, one of the main causes of city street damage is the STA buses. To the city, this represents a funding imbalance in that the transit authority is being subsidized by the city, which is straining its minimal resources to cover its highest priorities.

Interjurisdictional Coordination

Traditionally, the informal coordination between the city and the county has been fairly good. City officials cite the Centennial Trail as a typical example of this relationship, and say that there is no philosophical animosity between the city and the county; both jurisdictions suffer from funding and priority issues, but cooperation is good. The biggest problem has been to coordinate projects with overlapping needs, but that this has been getting better with closer communication.

The Spokane Regional Conference is responsible for regional transportation planning. All of the city's development, and all state and county projects are supposed to be part of that regional plan. This works out fairly well, according to city officials, because the plan is so large in comparison with what is available to spend on projects that jurisdictions can never go beyond the parameters of the plan. There is simply not enough funding.

The regional coordination process consists of projects and plans being submitted to the SRC, which then includes them in the regional TIP. Some city officials feel that until the SRC has the authority to prioritize, program, and fund projects, this coordination process is superficial. Although it is a useful mechanism to share information about what each jurisdiction is doing, it doesn't meet the more serious objective of planning, programming, and prioritizing on a regional basis. If the SRC and other MPOs are going to do real regional planning, they will need to have more authority.

A suggestion has been made to consolidate funding for the Spokane county region, along the lines of the Puget Sound Council of Governments. Although this was not met with great enthusiasm, particularly from the state, according to city officials, it did open the door to discussions about consolidating the areawide planning function between all jurisdictions. Although these discussions have just begun, there seems to be cautious approval of this as a practical way to solve planning coordination issues.

B.5 Vancouver

Context for Highway Programming

Employment, Population, and Road Network Characteristics

Table B.5.1 presents demographic and economic characteristics for the city of Vancouver, Clark County, Washington for the years 1980 and 1990. Table B.5.2 provides a description of the roadway system serving the city. The data in the tables provide the context for understanding the highway programming process for the city of Vancouver.

Vancouver is the largest city in Clark County, and the ninth largest city in the state of Washington. The 1990 population in the city was 46,380. Population in the city grew by eight percent between 1980 and 1990. Growth in the city has been slow relative to overall growth for Clark County, which grew by over 16 percent during the same period. Vancouver's slower growth rate reflects the fact that the incorporated area is almost fully developed. Conversely, the eastern part of Clark County was relatively undeveloped until the the Interstate 205 bridge opened in 1982. Access provided by the bridge opened large tracks of land in the county for residential, commercial, and industrial development.

Vancouver is located across the Columbia River from Portland, Oregon, which is the economic center of the region. Many people commute from Vancouver and Clark County across the Interstate 5 and Interstate 205 bridges to jobs in downtown Portland.

In 1990, there were between 27,000 and 30,000 jobs in Vancouver. The economy, which was once primarily reliant on resource industries such as agriculture and timber, has diversified substantially in recent years. Major businesses located in the city include Frito Lay's largest west coast chip plant, Vanalco aluminum processing (formerly ALCOA), a large Boise Cascade paper mill, a manufacturer of ceramic components for high technology equipment, a manufacturer of video and television equipment, an apparel manufacturer, and a yacht manufacturer. The port of Vancouver is very active, shipping agricultural products and timber, and receiving automobiles. Twelve thousand trucks per year (66 per day) access the port via SR 501 through the city of Vancouver.

Retail growth in the city has been stalled due to the development of the Vancouver Mall (outside the city limits) and competition from Portland. Oregon has no sales tax, so many Clark County residents travel to Portland to purchase big ticket items.

The city is responsible for 186 miles of roads, of which the majority (60 percent) are local residential roads. Only 16 miles (nine percent) of the

Table B.5.1 City of Vancouver Demographic Characteristics

	1980	1990	Percent Change 1980-1990
Population	42,834	46,380	8%
Employment	18,098	27-30,000*	49-66%
Land Area		15.65 sq. mi.	
Population Density		2848 persons/sq. mi.	

* This estimate is based on information from the State Department of Employment Security on employment by zip code. This is the best estimate available for 1990 employment for the City of Vancouver.

Source: Intergovernmental Resource Center, Washington State Employment Security Department, and population data from the Washington State Office of Financial Management, Forecasting Division, June 28, 1991.

Table B.5.2 City of Vancouver Road Miles by Functional Class

	Miles	Lane-Miles	VMT
Locally-Maintained Roads			
Principal Arterial-Non Interstate	16	59	2,727
Minor Arterial	21	56	1,599
Collector-Non Residential	9	19	407
Collector-Residential	10	21	468
Local-Commercial/Industrial	19	49	112
Local-Residential	111	228	732
Total	**186**	**432**	**6,045**
State Roads			
Interstate 5	3.39		
SR 14	3.77		
SR 500	.80		
SR 501	2.41		
Total	**10.37 Miles**		

Source: Washington State Road Jurisdiction Study.

city's roads are principal arterials (non-Interstate), and 21 miles are minor arterials. State highways account for ten miles of roads within the city limits. State route 501 is the major east-west route in the city. Other state routes in the city include state routes 14 and 500. The city is bisected by Interstate 5, the major north-south highway from Canada to Mexico.

Key Transportation Issues, Needs and Priorities

Maintaining the existing roadway system, addressing operational needs, and stimulating economic development have been the major objectives of the local highway program in Vancouver. Maintenance became important because of several years of neglect, which resulted in deterioration of the condition of the road system. Operational improvements (such as improved intersections and signalization) continue to be important because as development occurs in the region more through trips are occurring in the city. Economic development concerns and goals have become particularly important over the past decade, since retail development in eastern Clark County has attracted shoppers from downtown Vancouver. Many businesses look to road and streetscape improvements as a means to attract people and stores back to the downtown area. There is a major project in the planning stages to revert North Main Street from a one-way street to a two-way street in order to slow traffic. The purpose is to provide more visibility for shop owners and thus encourage more downtown spending. Improved access to the Port of Vancouver is also important for enhancing goods movement and stimulating economic development.

Since the city of Vancouver is almost fully developed, there is little need for new capacity within the city limits. Traffic congestion is not an issue at the present time, as peak period traffic does not significantly affect level of service on the local road system.

Road Expenditures and Revenue Sources

The total 1991 city budget for roads and related expenditures (primarily maintenance and new construction) is $7,394,000. In 1990, total expenditures for roads equalled $6,566,537, as shown in Table B.5.3. Approximately 47 percent of the budget in 1990 was allocated to maintenance, 34 percent to construction, 13 percent to traffic policing, and six percent to debt service.

A variety of Federal, state, and local funding sources provide revenues for the city's road program. Table B.5.4 shows that approximately 22 percent of the revenue sources identified for the 1991 road program will come from local sources. In 1983, the city council approved commitment of general fund dollars on an annual basis for an overlay and seal program. The funding for this program is now $1,000,000 annually. In addition, a local improvement district for sidewalks in the downtown area has been proposed. Bonds have not been used to finance construction since 1970.

Table B.5.3 City of Vancouver 1990 Expenditures by Category

Category	1990 Expenditures	Percent Total Expenditures
Construction	$2,263,629	34%
Maintenance	$3,059,820	47%
Other Street Related Expenditures (e.g., traffic policing)	$861,829	13%
Total Debt Service Expenditures	**381,259**	**6%**
Total	**$6,566,537**	**100%**

Source: City/Town Report to the Secretary of Transportation for Budget Year 1990, Washington Department of Transportation.

Table B.5.4 City of Vancouver Revenue Sources for 1991 Road Program

Funding Source	1991 Revenues	Percent of Total
Local		
General Fund	$1,000,000	13.5%
Local Improvement District	$700,000	9.5%
Local Tax		
State		
Arterial Street Fund (i.e., State Gas Tax)	$830,000	11%
Community Economic Revitalization Board	$825,000	11%
Transportation Improvement Board	$1,000,000	13.5%
Public Works Trust Fund	$2,000,000	27%
Community Development Block Grant	$134,000	2%
Federal		
Federal-Aid Secondary	$335,000	4.5%
Federal-Aid Urban	$570,000	7.5%
Total	**$7,394,000**	**100%**

Source: City of Vancouver Budget, 1991-1992.

In 1987, Vancouver voters approved a property tax increase to be used to retire debt on projects funded by the state's Public Work Trust Fund (PWTF) program for reconstruction projects. The tax incentive allowed for taxes to be collected to retire debt on up to five PWTF projects, each using $1 million in state PWTF funds. To date, four PWTF projects have been funded, and the city expects to receive funding for a fifth project during the next funding cycle. The tax rate is variable, depending on the debt service in a given year. This local tax is not reflected in the 22 percent local funds noted in the preceding paragraph. Instead, the funds show up as state funds through the PWTF account.

State sources account for approximately 63 percent of road revenues in Vancouver in 1991. Sources include the state gas tax allocation (11 percent, which is split between construction and maintenance), Public Works Trust Fund projects (28 percent of the 1991 budget), the Community Economic Revitalization Board (11 percent), the Transportation Improvement Board (14 percent), and the Community Development Block Grant Program (two percent). The PWTF funds shown in the 1991 budget are for two, equally funded projects, one of which was carried forward from 1990.

The city uses Federal revenues from the Federal-Aid Urban program (eight percent), and the Federal-Aid Safety program (five percent). These sources primarily are used for reconstruction, traffic signalization, and sidewalks.

Description of the Programming Process

Program Structure

Vancouver does not define programming categories in public works beyond major categories such as sewer, water, and transportation. Within the transportation category, programming for construction is done on a project-specific basis. Projects included in the program are segregated by available funding sources. The annual general fund allocation for transportation (currently at $1,000,000) is set aside specifically for maintenance through the overlay and seal program. The level of funding for the overlay seal program was originally determined through an unsophisticated pavement management assessment, conducted by the transportation manager. The city now uses a computerized pavement management system to identify needs and complete costs for the program.

Programming Methods and Process

Vancouver has not been faced with the challenge of prioritizing road projects to meet budget constraints. The city has sought grants aggressively and successfully, and has, in the past, allocated all Federal revenue to capital improvement projects. Unlike many jurisdictions that are faced with more needs than for which they can identify funding, the city has

successfully identified funding sources for most maintenance and construction needs. For the past several years, staffing constraints have driven the prioritization process. Insufficient staff to carry out all programmed projects has meant that the city has not been able to complete all projects for which funding has been obtained. The city has consistently carried over projects and funding from one year to the next. (This trend is not expected to change this year because of two large projects. The Mill Plain extension to the port of Vancouver is a major planning and construction project, funded through TIB and requires a 25 percent local match, which is expected to require large sums of available revenues. In addition, the project to convert North Main Street to two-way traffic will require $1-2,000,000 in yet unidentified funds.)

Needs assessment was described by the director of public works as an "organic" process, done at the staff level. Based on knowledge of the street system from daily observation, the transportation manager decides what projects should be undertaken first, and then fills in available time with additional projects. There are no explicit trade-offs made among safety, maintenance, or capital programs because these programs are funded by different sources.

Because preservation, reconstruction, and operational projects are funded from separate sources, one category does not receive priority over another. Vancouver does have a policy to preserve investments in existing assets. Operational improvements that address safety needs generally will take precedence over reconstruction. The timing of locally funded projects are more flexible than Federal programs, due to Federal spending requirements.

The community also has a voice in the prioritization of projects. Quarterly citizens' forums are held in the neighborhoods and attended by staff. Issues that are repeatedly raised at these forums will eventually become a priority. For example, a project to sign the truck route through town was delayed because it required alterations to some curb returns and installation of a traffic signal. The project was delayed because it was considered a relatively easy project that could be "fit in" when convenient. The project got pushed back as other projects took priority. After staff was repeatedly questioned about the timing for the project at citizens' forum meetings, the project was given priority.

Because of the importance of economic development concerns to the community, economic development planning areas are carefully considered in the planning process. The road plan reflects projects that have been requested by local businesses and planners to address economic development concerns.

In accordance with state regulations, the city maintains a six-year transportation improvement program (TIP). Vancouver also develops a

six-year capital improvement program (CIP). The CIP includes solid project programming for the first two years, and then, for the remaining four years, requires guessing based on anticipated funding. The TIP may include projects not found in the CIP. Projects for which funding has not been identified are left out of the CIP, but are included in the TIP in case funding should become available. The transportation component of the CIP is devised by the transportation manager, based on his professional judgement of needs and his knowledge of available funding sources. Individual programs may be recommended by the planning department.

After the CIP is developed by the transportation manager, it is reviewed by the director of public works, and then sent to the planning department. The planning department reviews the program for consistency with local land use plans. Finally, the program is sent to the Vancouver City Council for approval. The city council reviews the program to insure that projects that have been brought to the attention of the city council are included. In general, the city council relies on the expertise of staff in approving the program.

The city does not use a formal ranking system for projects in the six-year plan. Instead, the city tries to have identifiable funding sources attached to each project included in the plan.

The CIP for 1991 through 1996 includes a total of forty projects and programs, and has a total budget of almost 28 million dollars. However, over 91 percent of the budget is programmed to be spent in the first three years, reflecting uncertainty of funding sources in later years. The budget will likely exceed the $28 million identified by a significant amount. Local staff believe that the six-year planning process is more useful for a city or county facing significant growth than for a fully developed community such as Vancouver. One city councilor noted that a four-year program might be more reasonable for Vancouver.

Analysis

Impacts of Local Policy and Plans

Strong local support for preservation of the existing street system has been demonstrated through the city council's annual commitment of general fund revenues to the overlay and seal program, the 1987 voter-approved tax for repayment of Public Works Trust Fund debt, and private investment in the downtown area in conjunction with CERB projects. (The tax for repayment of PWTF debt, which required a 60 percent affirmative vote to pass, appeared on the ballot three times before passing.) Economic development in the downtown is an objective of the city council, and is reflected in the road program.

There is sufficient coordination between the road program and other city plans. The road program is developed by transportation staff, and is then reviewed by planners for consistency with land use plans before it is submitted to the city council. Because Vancouver is already well-developed, land use patterns are already well-established. Therefore, most road projects are reactive, and do not affect land use plans. For new development, coordination occurs in the environmental review process. Overall, policy makers rely on the professional staff to identify and develop programs from an engineering standpoint, and then work together to ensure consistency.

Influence of State Policies and Programs

Vancouver has not been constrained or influenced by state policies and programs in developing the local road program. Local staff believe that available state programs are addressing local needs, although more by accident than by design. The state program is described as "set up to meet engineering needs" rather than local needs. However, Vancouver has identified good projects that have allowed it to take advantage of available state funds to meet local objectives.

The TIP programming cycle, which is done on a fiscal year basis, does not coincide with the local six-year plan, which is developed for calendar years. While this does not create any real conflict, it does mean that staff must present the transportation program to the city council twice in a given year, rather than once. In addition, because the TIP generally includes more projects than the local program, questions can arise about these differences.

Vancouver has been successful in obtaining Community Economic Revitalization Board (CERB) funds from the state. However, staff have found that it is becoming more difficult to meet the criteria for CERB project funds. This is because many CERB projects throughout the state have not resulted in the job creation that have been promised in the grant application process. The state has, therefore, begun to scrutinize more carefully the forecast economic revitalization impacts of particular projects. This could affect local programming.

The Growth Management Act is expected to affect road programming in Vancouver. However, staff have not yet identified the potential affects of this legislation.

Interjurisdictional Coordination

The fact that Vancouver is not growing has meant that most road projects have been maintenance or reconstruction projects, and have required little interjurisdictional coordination. Because the city provides sewer and water services to a large area of the county adjacent Vancouver, it becomes aware of all county transportation projects in that area during the planning

stages. Occasionally, the city undertakes projects that extend into the county, and coordination is usually good on those projects. The city coordinates with the Intergovernmental Resource Center (the MPO) for data needs.

Project coordination between the state and the city is sufficient. The state informs the city about all state highway projects that might affect the city. For example, for the past seven years, the state has been widening I-5 in the vicinity of Vancouver. The city has been involved since the planning stage, and the state has taken steps to accommodate the city's concerns. The city is currently planning the extension of Mill Plain Avenue to the port of Vancouver. This road is slated to become a state route in 1992. Therefore, the state has been, and continues to be, involved in the plans for the project.